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OCCURRING IN

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THE

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ORIGINAL PAPERS,

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I. PRACTICE OF MEDICINE.

Observations on Spasmodic Contraction of the Passages for the Food, the Bile, and the Urine. By ALEXANDER MONRO, M. D., F. R. S. E., Professor of Anatomy and Surgery in the University of Edinburgh, President of the Royal College of Physicians, &c.

I.—GENERAL OBSERVATIONS.

THE study of those disorders which originate from a spasmodic contraction of the muscles, is of peculiar interest, on account of the number, variety, alarming nature, rapidity and danger, of the majority of these affections.

Sauvages and Dr Cullen have described under the class Spasm, epilepsy, tetanus, trismus, chorea, and other spasmodic disorders, seated in the muscles of voluntary motion, with much accuracy; and, in common with other writers, have made little or no mention of similar inordinate contraction, to which those muscles which are not under the dominion of the will are liable.

To enter into a detailed account of the spasmodic disorders of the voluntary muscles, or to go over ground so often trodden, is not my purpose. I propose to limit my views to a more narrow compass, and to subjoin some remarks upon the causes and consequences of the spasmodic contraction of the muscular coat of the passages for the food, the bile, and the urine,—a subject of no inconsiderable interest in an anatomical, physiological, and pathological point of view *.

In treating of spasmodic disorders, it seems necessary to animadvert upon the peculiar distribution and mode of action of the muscular fibres proper for the passages of the food, the bile, and the urine; concerning which, anatomists and physiologists are by no means agreed, and some have gone so far as to deny the existence of the muscular fibres in the neck of the bladder of urine, and those of the urethra; and also of those of the gall-bladder and gall-ducts.

By the alternate contraction and relaxation of the muscular coat of the passages for the food, the bile and the urine, the latter are rendered subservient to their particular purposes in the economy of the healthy body.

The muscular fibres in the muscular coats of these several bowels and passages, are not equally large and conspicuous; thus, those of the pharynx, gullet, stomach, are larger than those of the intestinal canal: and further, the muscular fibres are larger in some than in other portions of the same canal. Thus the muscular fibres of the ureters are more conspicuous near the entrance of these musculo-membranous tubes into

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* The subjoined is a list of Authors who have written on various Spasmodic Diseases.

Hoffman (Casparus), Dissertatio de Spasmo seu Convulsione ejusque causis, in 4to, Altdorpe 1620.
Heister (Laurentius), Dissectio Mulieris miris spasmis brevi defunctæ.
V. Ephemerid, Naturæ Curiosor. centur. v. et vi. p. 166.
Kaltschmied (Carolus Fredericus), Dissertatio de Affectibus spasmodicis vagis, in 4to. Jenæ 1754.
Baumer, Programma de iis quæ spasmis rigidis particularibus communia sunt, in 4to. Gissac 1776.
Cullen, G. M. G. xlvi. Sauv. Nos. Method. cl. 4. 0. 11. G. vii.
Pauvay, ibid. G. viii. Lin. G. cxxviii. Vogel. G. clxxxiii.
Vogel, G. clxxxi.
Vogel, G. clxxxii.
Cull. Nosol. G. xlvi.
Sauv., idem, sp. 1.
Sennert., Sauv. et aliis Journ. de Med. Avril 1764, p. 336.
Sauv., ibid. sp. 2.
Planer, Dissertatio de Spasmo seu Convulsione ejusque causis, in 4to. Tubingæ 1790.
Andreæ, Dissertatio de Constitutionis ævi nostri spasmodicæ quibusdam momentis, in 4to. Erfordeæ 1797.
Marx, De Spasmis. Hal. 1765.
Boehmer, de Spasmorum, &c. 1762, Hal.
Cooke on Nervous Diseases, 2 vols.
Fabricii de Spasmod., &c.
Hamilton on Purgatives.

the bladder, than near the kidney. Much has been written concerning the extent of the contractile power of the muscles, which does not bear a proportion to their magnitude, but rather to the particular course they follow *.

The muscular coats of the alimentary canal possess a great and very perfect degree of muscular power. Those of the stomach are remarkable in this point of view, and may be contracted to a great degree; and those of the intestinal canal act in so perfect a manner, as to propel air, and even quicksilver, through the tube, contrary to its gravity. The same observation, also, applies to the muscular coats of the bladder.

According to physiologists, a muscle is capable of contracting itself to a third of its length; but there are many exceptions to the above remark; for there are several muscles of the human body which contract to a much greater extent:—Thus the sphincter oris may be extended, so as to include all the fingers, and the next moment contracted upon a needle; and, in the same manner, the bladder is capable of containing 6 lb. or 8 lb. of urine, and in a short time the whole of it, excepting a few drops, is expelled.

In forming an estimate as to the degree of muscular contraction, we must not, as Magendie observes, "confound muscular contraction with the modifications which it suffers in diseases, as convulsions, spasms, tetanus, wounds of the brain, &c.; we must also take care not to confound the contraction of which we are speaking, with the phenomena that the muscles present some time after death."

By the contraction of the muscular coat of the alimentary canal, and that of the passages for the bile and urine, their contents are pushed onwards, and this contraction is speedily followed by relaxation. Thus the coats of these organs are rendered subservient to their particular purpose, but when these passages are spasmodically contracted, there is, at least for a time, no degree of consequent relaxation; and hence the part spasmodically contracted is more or less straitened. A spasmodic contraction occasionally takes place through the whole of the muscular coat, of the stomach, or of the gall-bladder, or bladder of urine, but more frequently it is only partial, affecting only certain portions of the muscular coat.

The muscular structure of the alimentary canal has been well described by all the more modern anatomists, but the same remark cannot be extended to that of the biliary and urinary passages.

It has been above stated, that the passages for the bile are

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* See my Father's observations on the advantages which are derived from the oblique direction of the muscular fibres, and Sir E. Home's observations on the distribution and mode of action of the muscles of the heart.

also provided with a muscular coat. On this point there exists some diversity of opinion. Soemmering, one of the most distinguished anatomists of the present day, has observed, "Fibræ musculares (vesiculæ felleæ) nullæ patent, saltem in nonnullis cadaveribus plane *nihil fere cernitur*, quod musculi aliquam præ se ferat speciem *.

The muscular structure of the gall-bladder has been denied, because it is not obvious to our imperfect senses; but if the gall-bladder adapts itself, on all occasions, to its contents, and assists in expelling these, and also contracts, in a living animal, when mechanically irritated, (which I have seen take place, for the space of half an hour, by which it somewhat resembled an hour-glass), and if it contracts upon a small gall-stone, as firmly as the bladder of urine, we might, with as much truth, deny the existence of the muscular coat of the bladder of urine, as that of the gall-bladder.

In farther proof of the analogy between the structure of the gall-bladder and of the bladder of urine, it may be added, that, when gall-stones have been accumulated within the gall-bladder, the muscular fibres, like those of the bladder of urine containing a urinary calculus, become much thicker.

The remarkable arrangement of the muscular fibres of the bladder of urine has been very differently described by different writers upon anatomy,—a circumstance which induced me to investigate this department of anatomy with every care, not only in the sound, but also in the thickened bladder.

These investigations have led to a more full description of the arrangement of these fibres of the bladder. In my Elements of Anatomy I have described the very remarkable disposition of the muscular fibres of the bladder of urine; and as this Journal, which has now a very extensive circulation, may fall into the hands of those who have not read the description above alluded to, I shall transcribe a considerable portion of it.

The *Muscular Fibres* of the bladder, in the healthy state, are flattened, of a pale colour, of a small size, and disposed in fasciculi, which cross each other in every possible direction, and completely surround the bladder.

When the bladder is distended, and the muscular fasciculi are elongated, these fibres are much separated from each other; so that the internal coat of the bladder is seen between them; but, when the bladder is empty, the muscular fasciculi of that organ approximate each other. These muscular fibres are not of an uniform size. Those which are external are the largest, and are disposed in a longitudinal direction. The smaller cross these.

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* Sœmmering De Corpor. Human Fabrica, tom. 6. p. 191.

I conceived it to be a matter of great moment to trace, with care, the direction of the fibres of the bladder, and especially of those fibres which are disposed around the neck of that organ, concerning the course and existence of which, very different accounts have been published by different anatomists.

The muscular fibres of the bladder arise from the prostate gland, and from two small muscles, which proceed from the ligaments of the prostate to the fore-part of the neck of the bladder. These fibres are composed of an inner and an outer stratum, which pass imperceptibly into each other *.

The fibres of the fore-part of the bladder are smaller than those of the sides. The fibres of the sides are flat, particularly those which follow a transverse direction and form the inner stratum. Most of the fibres of the outer stratum are disposed longitudinally; others, however, run in a serpentine course, describing portions of larger and smaller circles.

The fibres of the upper part of the bladder are paler than those of the lower portion and neck; the superior fibres resembling, in colour, those of the stomach; the inferior, those of the œsophagus.

The muscular fibres of the anterior side of the bladder arise from the prostate gland, and from two small muscles of a triangular shape, extending from the ligaments connecting the prostate gland to the under and inner part of the symphysis pubis. These triangular muscles are thin, of a deep red colour, and, on the inside, separated about an inch from each other. They are covered by the ligaments of the prostate, from the outer and under parts of which ligaments they take their origin. Like these ligaments, they are insulated, having on their outside the little depressions of the ilio-vesical fascia; and, on their inside, the membrane of the infundibulum, or digital cavity. They are separated at the fore-part by a large plexus of veins, and by the cribriform fascia, which divides them from the

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* "Elle tient le milieu pour la couleur et l'épaisseur entre celles de l'estomac et de l'œsophage. Assez prononcée vers le bas-fond, entre les vésicules séminales et à la région supérieure, elle est par-tout ailleurs extrêmement mince. Elle est composée d'une grande quantité de petits faisceaux blanchâtres, aplatis et affectant diverses directions. Le plus grand nombre cependant est longitudinal, quelques-uns seulement sont transversaux. Ceux qui sont situés sur la ligne médiane paroissent monter de la prostate et du col de la vessie vers l'ouraque; les autres naissent des parties latérales de ce col, et viennent s'entrecroiser à la région supérieure. Quelquefois, ainsi que nous l'avons dit, ils se réunissent en colonnes cylindroïdes, entrecroisées, plus ou moins saillantes."

" Le col de la vessie n'est point environné par un muscle particulier, ainsi que le veulent plusieurs anatomistes, qui ont même appelé ce muscle *Sphincter*; les fibres charnues sont seulement plus rapprochées autour de lui qu'ailleurs; et elles y sont appliquées sur une couche d'un tissu blanchâtre, comme fibreux, ferme, élastique, extensible, qui se prolonge en s'amincissant jusqu' à la base du trigone, et qui concourt à former la saillie de la luette vésicale."—See *Cloquet*, p. 617.

muscles described by Wilson. Their inferior surface faces towards the prostate gland, where there is interposed between the gland and the muscles a plexus of veins, formed by the branches into which the vena dorsalis penis divides, on passing through the cribriform fascia. Each muscle is divided by a few veins, into two portions, the superior and inferior; the superior deriving its origin from the upper part of the prostatic ligament, close to its connection with the symphysis pubis; the inferior, arising from the lower end of the ligament, contiguous to its attachment to the prostate. The superior fibres of this muscle of the right side pass backwards to the fore-part of the neck of the bladder, and, about an inch behind the prostate gland, cross over the corresponding fibres of the left side, spreading out on the lateral and fore-parts of the bladder. The inferior and largest portion of this muscle extends almost directly backwards, in the form of a triangle, the base of which is attached to the neck of the bladder, where it is intimately connected to its fellow. From this base, after being connected to its fellow by a few cross slips of fibres, it radiates in several directions. The most internal fibres run almost parallel to each other, and, with the fibres of the opposite muscle, proceed along the fore-part of the bladder, over other fibres, originating from the prostate. Some of these parallel fibres reach as far as the base of the urachus, into which a few are inserted. The most exterior fibres embrace the neck of the bladder, and mingle with those of the back part, where a few assist in forming the transverse fibres of the inner stratum.

Below, and a little to the outside of, this muscle, some scattered fibres, described by Santorini, appear, which arise from the fore and lateral parts of the prostate, encircling the bladder with numerous fibres, running chiefly anterior to the entrance of the ureters.

Between these muscles of Santorini, and a fasciculus at the back-part of the bladder (afterwards to be described), there are a number of fibres, extending from the posterior and lateral surfaces of the prostate, which, spreading out on the lower part of the bladder, form the very strong fibres that are laid over the bladder at the point where it is perforated by the ureter. Some very minute fibres of this portion are reflected upwards and backwards on the ureter, and seem to compose its longitudinal muscles.

A fasciculus of fibres, the largest and most prominent on the outside of the bladder, arises from the posterior of the prostate, at the point of its attachment to the seminal vesicles. This bundle proceeds backwards and upwards, in a longitudinal direction, increasing a little in breadth as it ascends to the middle of the bladder, where it divides itself into three portions, the two lateral and central.

From the middle of the bladder, the lateral portions commence, diverging forwards and upwards, in a curvilineal form, to the anterior of the bladder, whence they are seen passing downwards, in a circular direction, nearly as far as its neck.

The central portion extends upwards to a point situated about three inches from the urachus. Around this point they describe numerous circles on the summit and posterior part of the bladder, the most anterior fibres of which come in contact with the back of the base of the urachus.

On detaching the highly elastic mucous membrane from the inner stratum, we find, that it firmly adheres to the muscular fibres by bloodvessels, and a cellular tissue, which is short, compact, and remarkably white. The mucous coat dips into the depressions between the muscular fibres. Towards the neck of the bladder the membrane becomes gradually thinner and more transparent, adhering very closely at the trigon.

The muscular fibres of the inside of the bladder follow chiefly a transverse course, and they form distinct fasciculi at the back-part of the bladder, of a considerable breadth, being very much separated from one another; resembling, in this respect, the pectinated muscles of the right auricle of the heart. These larger columns are connected by numerous slips of fibres, so that they appear to intersect each other at different angles. By this intersection of the muscular fibres, various depressions are formed, giving to the inside of the bladder an irregular reticulated appearance. About two inches above and behind the openings of the ureters, the largest fibres run in a transverse direction, and between them are observed very distinct oval-shaped fissures. Towards the lateral and fore-part of the bladder they become smaller and pass more obliquely. Near the attachment of the urachus, the transverse and oblique fibres gradually diminish in size, converging to its base, on which they are lost.

A set of extremely fine fibres, of a yellowish colour, is placed on the trigon, proceeding from different directions, but chiefly from behind, forwards to its sides; they, at its margin, suddenly assume a small size, resembling, in fineness and minuteness of texture, the muscles described by Wilson. A very prominent set of the fibres proceeds, almost transversely, between the openings of the ureters. The rest of these fibres surround the under part of the neck of the bladder in numerous concentric layers, terminating at each side of the fore-part of the neck; from this they pass backwards in a curvilinear form, and are convex towards the centre of the trigon.

On the superior part of the neck of the bladder ar of fibres, redder and larger than those described, is observed, disposed in a circular, but opposite direction, around the upper part of the neck of the bladder, which are covered by the under set of concentric fibres. The exterior fibres diverge considerably towards the sides of the bladder, whereas the interior, after closely embracing the neck of it, are lost in the under concentric fibres, with which they are intimately intermixed.

The muscular fibres of the bladder of urine are also occasionally affected by spasm, and contract upon the irritating cause in a general or partial manner.

The degree of spasmodic contraction excited by the presence of a stone in the bladder of urine and gall-bladder, is occasionally so great, that the stone is firmly embraced by the coats of the contracted organ, and in the former, a groove may be observed along which the urine flows; and, in the latter case, no bile can find its way into the gall-bladder. In the same manner, where death has been occasioned by strangulation, I have seen the bladder contracted into a small round or oval-shaped hard ball.

There is no canal in the human body so liable to spastic constriction as the urethra.

A diversity of opinion now prevails as to the muscular structure of the urethra. Mr J. Hunter, Mr Wilson *, and Sir E. Home †, entertain no doubt as to the existence of a muscular coat in the urethra.

Several arguments in favour of the muscular structure of the urethra may be adduced. When that canal is thrown into a state of inflammation by gonorrhœa, the urine is discharged in a small stream, or comes away by drops. If the penis be put into warm water, the spastic stricture is taken off, and the urine is readily discharged. If the stricture had been occasioned by the spasmodic contraction of the muscles of the perineum, the bougie would only be grasped in its passage through that part of the urethra which is opposite to these muscles, whereas it is grasped by the walls of every part of the urethra. The anatomy of the inferior animals affords a strong argument in favour of the muscular structure of the urethra, for in the horse and bull the muscular fibres of that canal are quite obvious.

Though, from the facts above enumerated, it appears to me that no doubt can be entertained as to the muscular structure of every part of the urethra; yet I have not been able, after the most minute examination, to detect muscular fibres connected with the mucous membrane of the human urethra,

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* Wilson's Lectures. † Sir E. Home, Phil. Trans.

excepting in that portion of it commonly called the membranous, in which situation transverse muscular fibres are obvious to the naked eye of the observer, after having dissected off Mr Wilson's muscle; an observation which also applies to a case I lately saw, in which the longitudinal folds of that canal were even more distinct than they have been represented by Mr Wilson. The urethra, in the instance alluded to, terminated about an inch behind the glans penis, and there were two orifices, through which the urine was discharged, and which were so very small as to admit only a hog's bristle. The exit of the urine in this case must have been much impeded, in consequence of which that canal was expanded, and its folds were enlarged.

II.—OF THE PARTIAL CONTRACTION OF THE PASSAGES FOR THE FOOD, THE BILE, AND THE URINE.

The partial is more frequent than a general contraction of the hollow bowels, and is various as to its extent; in some instances, the stricture does not exceed in breadth a few lines, but in others it is more considerable.

There are some very interesting circumstances regarding this partial contraction, which merit particular notice, and from which it may probably be inferred, that certain portions of the muscular coat are much more irritable than others. For example, the spasmodic constriction of the gullet, most frequently happens at the connection of that tube with the stomach; that of the stomach in or near its middle, dividing the cavity into cardiac and pyloric portions, which are again sometimes subdivided into two or three distinct sacs, so that it somewhat resembles that portion of the intestinal tube called *the colon*.

It may be also remarked, that the intensity of the contraction varies in different parts of the body, as much as its duration. Thus the spasmodic contraction of the stomach is of short duration, but that of the gullet frequently lasts for many weeks.

It is a remarkable circumstance, that every part of the passages for the food, the bile, and the urine, is not equally liable to spasmodic constriction. In my thesis De Dysphagia, I have described at some length the disposition of both strata of muscular fibres of the gullet; the exterior of which follows a longitudinal direction, and is considerably stronger than the internal transverse stratum.

A contraction of the gullet most frequently takes place at the conjunction of that canal with the stomach. A contraction often takes place in the stomach, about half way between the cardia and pylorus. This contraction of the middle of the stomach has been noticed by many anatomists.

Mr William Cowper has described, (in his explanation of his 34th plate), what he has named "*two bunches* in the lower part of the stomach," and Schneider and Blasius have made mention of cases, in which the stomach has been divided into three sacs. Riolan, Blasius, Morgagni, Larry, Walter, Ludwig, Hufeland, and Vander Kolk, have also described the contraction in the middle of the stomach. This contraction is either temporary or permanent; and, according to Morgagni, is connected with a derangement in the functions of digestion. It is most obvious in those instances where the stomach has attained an unusual size, and is probably only the result of that spasmodic counter action, which takes place at the moment of death, for, after the lapse of 24 hours, it goes off, unless it be the effect of disease; which holds true, also, with respect to the intestinal canal, and the gall bladder, and bladder of urine.

The contraction in the middle of the stomach does not invariably go off. In this, as in other instances, the temporary stricture lays the foundation of a permanent one. Stricture sometimes takes place in the lower portion of the smaller intestine, but much more frequently in the lower portion of the larger intestine. In a few cases the bladder of urine is so contracted as to form several sacs. We frequently meet with different portions of the bladder contracted around small stones; and the constriction is so very great, that the passage between the open cavity of the bladder, and the cyst containing the stone, is remarkably small; I have seen it of so small a size, as only to be capable of containing a hog's bristle.

There is no peculiar portion of the bladder in which these cysts are found, nor is there any peculiar muscular apparatus which is adapted to bring about a contraction around the stone. Therefore, the muscular fibres of the bladder are of so irritable a nature, and so disposed, that they are capable of contracting around any stimulating substance which is applied to any part of the bladder. Mr Allan informed me, that he had met with an instance, in which there were two stones lodged within the bladder. One of these was readily removed by the forceps, but the other could not be extracted at the time: It therefore occurred, that, as the groping for a considerable time with the forceps in the bladder proves extremely dangerous, it would at the moment be more prudent to desist from further attempts to extract the stone, which was then very firmly grasped by the contracted portion of the bladder, and that the stone probably would come a way of itself along with the urine, in consequence of the subsequent relaxation of the contracted part of the bladder. This accordingly happened, and the patient recovered.

A contraction sometimes takes place in *the middle of the bladder*, so that that organ somewhat resembles an hour-glass. I have had occasion to meet with two instances of this description. Both patients were of the same age, six years old, and both were afflicted by stone of the bladder, for which they underwent an operation. The one was cut according to the lateral method; the other by the high operation, by my colleague Dr Ballingall.

Both died after the operation; the one who had undergone the lateral operation survived it four days; the other, who underwent the high operation, died in the course of thirty-two hours. In both, the coats of the bladder were much thickened, so that the capacity of the bladder was much diminished, and in both, there was no appearance of constriction in the middle of the bladder after the lapse of a few days; and it may not be improper to add, that I could not detect any appearance of extraordinary thickening towards the middle of the bladder, the seat of the spasmodic constriction in either case.

The contraction of the gravid womb occasionally is so complete, that only a finger can be passed through the contracted portion; so that in order to extract the placenta, it is necessary to overcome the stricture, by passing one finger after another, through the contracted part. At length, the contraction is taken off, but the doing so gives considerable pain to the woman.

The vagina is also liable to a partial and spasmodic contraction, which sometimes takes place at its mouth, or towards its middle, and this is occasioned by the partial contraction of the sphyncter muscle, proper to that canal. The Fallopian tubes are also sometimes spasmodically contracted into a spiral form, by the partial contraction of their muscular coat. A partial contraction of a portion of the intestinal canal, of the biliary ducts, and of the urethra, also sometimes occurs.

The ductus communis choledochus, and the ureters, are most frequently constricted at their conjunctions with the duodenum and bladder of urine; and, in short, the hollow bowels and canals proper to these, have a general muscular coat, but there is no peculiar apparatus for producing a partial contraction.

III.—OF THE CAUSES WHICH INDUCE A SPASMODIC CONTRACTION OF THE MUSCULAR FIBRES.

It would lead to a very long digression, totally foreign to the object of this paper, to enumerate the various causes which have been supposed to give rise to a morbid sensibility, or what has been called the *nervous temperament*. The chi these causes have been summed up by Dr Gregory in the following paragraph in his Conspectus Medicinæ, vol. i. p. 389. "Habitus corporis nimis sentiens, et nimis mobilis, homines spasmis opportunos reddit; hinc malum foeminis, infantibus, debilibus, luxuriosis, desidibus, sanguine plenis, familiare."

The very intimate connection existing between the nervous and muscular systems, renders it probable, that in every case of spasmodic contraction, the nervous system is primarily affected. The spasmodic contraction of the passages for the food, the urine, and the bile, is generally excited in consequence of the application of a local stimulus, as by that of an extraneous body, by a calculus, a tumour, by worms, or by partial inflammation.

Spasm is likewise excited not only in the part to which the irritation is more immediately applied, but also in the more remote parts, in consequence of the application of a stimulus. Thus the spasmodic stricture of the urethra has been sometimes occasioned by the irritation of chirurgical operations, or by fracture or dislocation of the extremities.

A spasm which had been at first partial, in some instances becomes general over the whole muscular system; and it passes with great rapidity from one part to another. There is great diversity as to the duration of spasm; it is either permanent, remitting, intermitting, or periodical, and sometimes is so very slight as to create only a kind of tremulous motion of the part affected, but, at other times, it is very intense.

The effects of local stimuli upon persons of different constitutions are very different. Thus, some have a call to make urine, when but a few ounces of that fluid is collected within the bladder, but others, not until the bladder has been considerably distended, from containing a pound or more of urine. This is to be attributed in part to the different degrees of irritability, and also to the influence of habit. Another proof of the different degrees of sensibility of the bladder, is, that the injection of tepid water into the bladder, has sometimes alleviated the excruciating torture occasioned by stone in this organ, and when the inner mucous membrane, perpetually irritated by the stone, was probably in a state of unnatural excitement, or chronic inflammation; whereas, on the other hand, the introduction of an instrument into the bladder, or even of tepid water, is to others intolerable, and a source of excruciating agony or fainting. It may be also remarked, that the severity of the symptoms of stone in the bladder of urine, is by no means proportioned to the roughness or smoothness of the surface of the stone. I have repeatedly seen those stones, which, from the extreme roughness of their surface, are called mulberry, extracted; and which did not before the operation excite greater uneasiness than a stone 'th a perfectly smooth surface. It may be added, that there are several well authenticated cases upon record, in which the coats of the pelvis of the kidney, and of the bladder, had so far lost their natural irritability and sensibility, that stone has been found within these organs after death, when there was not even *the most distant suspicion during the life of the patient, of the existence of* such a cause of irritation *.

When a spasmodic contraction has taken place, it is occasionally considerably aggravated by different causes, and more especially by cold, or by an attack of inflammation, or after indulging to excess in wine or spirits. In the same manner, those affected by stone in the bladder of urine, are liable to paroxysms of pain after walking or riding. What has been above stated, applies also to the gullet. The muscular fibres of the gullet, even though not inflamed, sometimes become much more irritable than common, especially in women of a debilitated habit of body. Hysterical women are also subject to spasm of the gullet, to which the great distention of the stomach by wind contributes. Even young women, in whom there is no degree of globus hystericus, are subject to this kind of constriction, when exposed to a stream of air; and also, when the air is highly charged with the electrical fluid, as before, or during a thunder storm. In the erect posture, a greater effort is required in order to swallow solids than fluids; when the power of swallowing has been slightly impaired, fluids pass down, but not solids.

Dr Percival has observed, "Liquids sipped slowly, and swallowed leisurely, meet with no resistance, but when hastily drunk in too large quantity, they are quickly regurgitated."

Though local stimuli be the most frequent causes of the spastic constriction of the muscular coat of the passages for the food, the bile and the urine, yet a cause diametrically opposite, the want of the usual stimulus, sometimes produces the same effect.

Thus the urethra has been, in the first place, contracted, and ultimately rendered impervious, when all the urine has passed through the canula of a trocar, which had been employed for puncturing the bladder above the ossa pubis; in the same manner as the shrinking of muscular fibres of other parts of the body follows an attack of palsy.

By particular poisons, especially that of *hydrophobia*, the muscles have acquired a morbid sensibility; and when in that morbid state, their contraction is excited by causes which, in other circumstances, exert no influence over them. Thus, after the bite of a mad dog has been received, the muscles of the pharynx are thrown into immediate and violent contraction by the sight or noise of water, or by the application of a drop of water to the mouth.

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* Vide Cooke's Edit. of Morgagni, vol. ii. p. 375.—Boneti, Sepulch. Anat. lib. iii. sect. 24.—Shenk. De Vesic. Urinaria, obs. 269.

IV.—OF THE CONSEQUENCES OF THE TEMPORARY SPASMODIC STRICTURE.

A permanent organic stricture is frequently a consequence of a spasmodic stricture of some duration. Thus, when calculi are imbedded within small sacs formed by the decussation of the muscular fibres of the bladder, the irritation of the small stones occasions a thickening of these muscular fibres around the passage of communication between the sac containing the stone, and the open cavity of the bladder; and thus these small stones become firmly fixed in their situation. In the same manner, urinary and biliary concretions are retained in their unnatural situation, by the contraction of the ureters and gall-ducts. In a remarkable case, which my colleague Mr Russell shewed me, the bladder of urine resembled an hour-glass, in consequence of a spasmodic stricture, which, from its duration, had passed into a permanent organic stricture.

The above remarks apply also to the muscular coat of the intestines, which, when irritated by an intestinal concretion, becomes much thickened around the concretion, which is thus ultimately fixed in a certain situation *.

The portion of the canal above the stricture becomes very much expanded; after which inflammation, ulceration, and erosion follow. Thus an unnatural communication is established between the neighbouring parts, which sometimes proves a cause of death, as when bile or urine enters into the abdomen or pelvis, or when purulent matter passes from the gullet into the windpipe; or when, from the urethra bursting, the urine is discharged through a fistulous opening in the perineum.

Another cause of impediment to the free egress of the food and urine sometimes is occasioned by the protrusion of the internal mucous membrane between the muscular fasciculi, and forms a considerable pouch which communicates with the cavity of the intestine †, or bladder of urine. I have seen such herniæ of the internal coat of the bladder, considerably larger than the largest sized orange.

Having premised these remarks regarding spasm in general, I shall subjoin a few observations on spasm of particular portions of the alimentary canal, and of the biliary and uriniferous passages.

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* Vide Morbid Anatomy of the Gullet, Stomach, and Intestines, p. 60. and also Plate III.

† Id. p. 405.

Of the Spasmodic Contraction of the Pharynx.

The spasmodic contraction of the pharynx is much more rare than that of the gullet, if we except the cases of hysteria, in which it is very frequent.

The most violent and permanent degree of contraction of the pharynx, occurs in cases of hydrophobia. To illustrate the subject, I shall describe the case of a woman I visited, who, on Thursday, 11th September 1797, was seized with symptoms of hydrophobia, about nine weeks after she had been bitten by a dog. On Saturday the symptoms were aggravated. Her looks had a strange mixture of wildness and timidity. She was perfectly sensible, but found great difficulty on attempting to speak, though, after some efforts, she was able to articulate distinctly, and her words were then uttered with extreme rapidity. On proposing to her to swallow any liquid, she appeared much frightened; and though, on repeated requests, she consented, yet the sight of the fluid never failed to excite strong symptoms of abhorrence, and *convulsions of her face and throat.* After waiting some time, till she could call up sufficient resolution, she carried the cup hastily to her mouth, turning away her eyes, and then gulped down the contents with inconceivable rapidity, *amidst violent convulsions of the muscles of her face, throat, and upper part of her body.* For some time afterwards, she continued much agitated and convulsed, with efforts to retch, much sobbing, and frequent anxious respiration. She talked in the intervals with great unconcern of the wound she had received in her hand, but complained much of the pain of her shoulder, at the same time insinuating, that it was only a rheumatic pain, to which, it seems, she had been formerly subject. Pulse 102, somewhat sharp, but not strong; skin very warm, but moist; tongue white and clammy, and she complained of thirst, but had no headache, or uneasiness about her throat.

About 11 A. M. on Sunday, her looks were extremely wild, at the same time expressive of great horror. When spoken to, she was immediately attacked by convulsive motions about the throat, which precluded any utterance. By degrees she recovered the use of speech, said she had no pain, but extreme thirst; her tongue was white and clammy; pulse, at first, above 100, presently, however, it sunk to somewhat above 80. When drink was offered her, the convulsions in the throat were immediately induced. Her looks and gestures were still more expressive of distress. However, she was persuaded to try to take a little gruel out of a spoon. This, after various efforts, she snatched at suddenly, and gulped down with seemingly *great pain and distress, and violent agitation of all the muscles* *of her face and throat.* Such paroxysms were frequently renewed by the mention of any liquid, or any question or object, which caused any sort of surprise. But all the while she was completely sensible; and, in the intervals of the fits, gave a distinct account of her previous situation. On the evening of the same day, a spoonful of a draught composed of camphor, ether, and laudanum was prescribed; and, upon a spoonful being given, the convulsions became more violent than before; her breathing was more interrupted, long intervals being observed betwixt each successive inspiration, and her pulse sinking so low as hardly to be felt. By degrees she recovered; and, being raised again, she herself proposed to take another spoonful; this was accompanied with less commotion than before; but she then requested to be allowed some rest after the severe struggles she had undergone. At this time, it was very apparent that the glare of a candle, or any bright object, immediately caused the convulsions. I asked if she thought she could take a bit of bread, soaked in wine, to which she answered that it would not be amiss. Some little bits she afterwards got over, and the remainder of the draught.

11 P. M.—All the symptoms were more violent. Still, however, she was distinct; seemed very uneasy at first at my approach, as she dreaded another dose; was immediately startled and convulsed, when a candle was brought before her; said she could not bear the sight of it. When offered a bit of bread, with wine, entreated it might not be insisted upon, as she was sure it would not, did we know the painful struggles it occasioned to her. Her pulse was not to be felt; breathing more cut or interrupted; tongue white, and much viscid saliva appeared to have collected about the fauces; a cough, or some motion betwixt that and hiccup, much more frequent, and at times caused such a noise as might, by a lively imagination, be compared to the barking of a dog. An emollient injection was ordered; and, after the operation of it, an anodyne and fœtid one. The former was administered, but immediately returned, without any fœculent matter.

At 9 o'clock A. M. all the symptoms seemed aggravated; she had often short paroxysms of universal convulsions and tremor. Her pulse was not to be felt at the left, and hardly at the right wrist,—about 120. She often tossed about, started up in bed, and threw herself down again; the catching at her breathing incessant; often recovering, however, she presently recollected herself; said she had no pain; and, notwithstanding her seeming agony, could specify no particular distress. She asked for a mouthful of cold water, which she got over, in part, with violent struggles, and immediately cried out she was gone. She was, however, prevailed on to swallow a bolus of op. gr. ij., camph. gr. xv. This occasioned a similar paroxysm to that

which had been induced by the water. She died two days afterwards.

Of Spasm of the Gullet.

SPASM of the gullet is partial or general; and the partial constriction is most common at the union of the gullet with the stomach. When the gullet has been partially constricted, the patient feels as if some extraneous body were lodged within it, accompanied with an ascent of air, which is owing to the stricture preventing it from passing off by eructation; and when the spasm is seated in the lower part of the gullet, the food is either retained for some time by the spasm, and then reaches the stomach, or it is rejected as soon as it arrives at the seat of the disease.

The symptoms of spasm of the gullet are very well marked. The patient suddenly, and without an obvious cause, loses the power of swallowing, accompanied by a sense of constriction of the fauces, which have a parched appearance. Whatever the patient attempts to swallow is rejected, when it arrives at the seat of the spasm. If the whole of the gullet be spasmodically affected, the food is immediately rejected as soon as it has passed the pharynx, during which the patient's body is much agitated. In consequence of the continuance of the spasm, great weakness and emaciation succeed, from the small quantity of nourishment that is swallowed.

The seat of the spasm can only be accurately discovered by passing a probang, which is firmly grasped by the contracted part of the gullet, and cannot be passed into the stomach. Another circumstance respecting spasm of the gullet, which merits particular mention, is, that after the spasm has left the gullet, it sometimes attacks the muscular coat of the stomach.

A spasm of the gullet sometimes comes on very suddenly, while the subject of the attack seems in good health; and its duration is various; for, in some cases, it lasts only a few hours, but sometimes for many days, weeks, or years.

I was acquainted with an elderly gentleman who was twice, in the course of his life, seized with a spasm in his gullet, during dinner; and, upon both occasions, he lost the power of swallowing suddenly, and when he seemed to be in good health.

The first attack of the disorder lasted *only for a few hours*, and was removed by an anodyne clyster, but the second was of three or four days duration, notwithstanding the repeated use of anodyne clysters, and other antispasmodic remedies. This patient, for ten years afterwards, enjoyed perfect health, and died from inflammation of the lungs.

In some cases upon record, the spasm was very readily removed, but in others it proved obstinate. Oysterdyck mentions a case in which such spasms lasted for twelve days. A case was communicated to me by my colleague Dr Home, in which the spasmodic contraction was of six weeks' duration; and Mr Aird has made mention of a case in which the spasm of the gullet continued through the whole course of a long life. A very singular and very obstinate case of a similar description occurred in our hospital in 1792, under the charge of Dr Rutherford. The patient, a young woman of 20 years of age, had long laboured under epilepsy, which was succeeded by palsy of one of her limbs, and imperfect vision of the one eye. She gradually lost the power of swallowing; and at length, upon attempting it, was seized with convulsive attacks. At first an attempt was made to support life by nutritious clysters, but afterwards it was found that a whalebone probang might be passed into the stomach; upon which a tube, made of the elastic gum, was passed into the stomach, through which soups and milk were thrown, three times every day, into the stomach, for two years and eight months. The patient gradually recovered the power of swallowing, and enjoyed a tolerable share of health. She died in consequence of inflammation in her lungs. The gullet, upon dissection, was found perfectly sound.

The following important case of spasm of the gullet has been given by Hoffmann. A man, in consequence of excessive grief, was seized with spasm of the pharynx, and difficult deglutition, and had the sense as if some foreign body had been thrust down his throat. During the accession of the spasmodic contraction, the patient was subject to shivering and sometimes shaking of his extremities, constipation, formation of wind in his intestines, want of sleep, had hard pulse, and limpid urine. This disease lasted three months, with intervals between the paroxysms. When Hoffmann was consulted, he prescribed mucilaginous substances, combined with antispasmodic medicines, and chiefly his own anodyne liquor, to which remedies he added pediluvia, and soothing frictions on the outside of the neck; and, in this manner, he cured his patient in six months.

Of the Symptoms of Spasm in the Stomach.

Spasm sometimes pervades the whole stomach, or is limited to its apertures. Spasm of the stomach is occasioned by various causes. Stricture at the *cardia* is sometimes the effect of air contained within the stomach, as occasionally takes place in hysteria, dyspepsia, &c.

I visited a lady who suffered much from pain in the stomach, and great distention in the intestines, from eating a few slices of cucumber.

Baron Haller has related the case of a person who lost his life from inflation of the stomach, the effect of eating melons. My Father was consulted by a gentleman who suffered the most excruciating torture in his bowels and stomach, from distention, occasioned by his having eaten a large quantity of nuts. The most acrid purgatives were given in vain: at length a stool was procured by the smoke of tobacco.

The symptoms of inordinate distention of the stomach are, acute pain in the stomach, difficulty in breathing, weak pulse, palpitation, which are sometimes followed by inflammation, or by sudden death. The spasmodic stricture of the pylorus is also often induced by the irritation of acrimonies of different kinds, and even by food of difficult digestion. Acute pain in the stomach is symptomatic of cancer of that organ; occasionally of incipient menstruation; of gall-stones in the gall-ducts; and of stone in the kidney. Cramp in the stomach is also not unfrequent in gouty persons, and from bulimia.

I had occasion to examine the body of a woman, who, when eighteen years of age, suddenly became giddy, and was seized with nausea, vomiting, and fluttering at her heart. She was somewhat relieved by vomiting. Body in general regular, though sometimes she had bilious diarrhoea. Her appetite then became inordinate. Her usual food was oatmeal porridge, and of this she used *to take about six English pints per day, and about a bottle of porter.* She generally rejected a part of her food, but as soon as the vomiting ceased, her desire for food returned so violently, that she was unable to resist it. A spasm of the pharynx often prevented her food from reaching the stomach; she was then tortured by the most intolerable hunger. She died from apoplexy.

The stomach and intestines were found to be in every respect natural.

Of Spasmodic Contraction of the Intestines.

A spasmodic contraction of the intestinal canal sometimes takes place, and gives rise to colic, which is excited by a variety of causes. Various species of colic have been enumerated by authors:—the *Colica stercorea*, *flatulenta*, *Pictonum*, *spastica*, *biliosa*, *accidentalis*, *phlogistica*, *scirrhosa*, *herniosa*, *dysenterica*, *calculosa*, *verminosa*, *hæmorrhoidalis*, *arthritica*, *scorbutica*, *nephritica*, and *hepatica*. Much pains have been taken to distinguish these very different kinds of colic, and also the place of the contraction of the intestines. The *Colica stercorea* is said to be distinguished by the sense of weight and fulness in the bowels, and by the constipation which has preceded it. The *Colica flatulenta*, by the intestines being much stretched by air, by their elastic feeling, by the rumbling which the air passing from one part of the intestines to another creates, by the pain in the belly changing its place, by the relief which the discharging the air upwards or downwards gives, and by the constipation; and this species of colic has sometimes been said to be the cause of the umbilical hernia. The *bilious colic* has been supposed to be distinguished by the acute pain it creates, though the abdomen be not tense, by the bitter taste in the mouth, bilious vomiting, by its exacerbations and remissions, by the pulse being somewhat accelerated, and by its tendency to pass into cholera or inflammation of the intestines. The *symptomatic colic* is distinguished from the *idiopathic*, by the previous history of the case. It has been supposed to be possible, from the symptoms, to discover the seat of the unnatural contraction of the intestines. Thus pain at the navel has been supposed to be characteristic of contraction in the jejunum or ilium; nervous oppression, torpor, inclination to sleep, when the stomach is empty, occasional distention of the abdomen, pain in the right side, which is occasionally very great, and which stretches to the back, and occasionally to the top of the right shoulder, and which changes its place upon the expulsion of air, slight yellowness of the eyes and countenance, with an irregular and soft pulse, the contraction of the duodenum; and pain in the right side, stretching upwards to the region of the liver, that of the caput cœcum coli.

Sauvages has made, what appears to me, a very just observation respecting the diagnosis of the different kinds of colic: "Cum intestinum tenue et crassum diversas sedes occupet, et diversis visceribus abdominis contiguum sit, difficile est ex sensu ægrotantis partem affectam determinare, et errare in hoc assignando quotidianum est;" besides, though the seat of the constriction could be ascertained, that circumstance does not alter the method of treatment.

A languid, dejected, or maniacal expression of countenance is very characteristic of the colic occasioned by the poison of lead or of copper. There is also giddiness, dimness of sight, loathing of food, pain at the pit of the stomach, occasional nausea, and bilious vomiting, costiveness and severe colic. The patient becomes more costive, as the sickness, bilious vomiting, and pain in the bowels increase.

Upon the vomiting ceasing, the pain abates, and hiccup comes on; but the pain soon returns, and often extends to the region of the navel, to the back and loins, and even to the legs; the muscles of which are in some cases painful on pressure. The pathognomonic symptoms of the painter's colic, are the acute twisting pain about the navel, which is not increased on pressure, the dragging inwards of the parietes of the abdomen, which, when pressed, feel hard or knotty, tenesmus, and obstinate costiveness.

The sphincter muscles of the bladder and anus are in some cases much contracted, and prevent the discharge of the feces, and also occasion difficulty in passing the urine. The above symptoms are generally of several days duration. Towards the conclusion of the disease, the patient suffers from griping, has a disposition to go to stool, and discharges a quantity of feces in the form of hard balls, like sheep's dung, mixed with a viscid mucus or blood.

If the patient be exposed to cold, or gets his shoes wetted, or is inattentive to his diet, the colic returns.

When this disorder has been neglected, or improperly treated, it lasts for several months, in some instances, for years, and terminates in a palsy of the upper extremities, in weakness, or loss of voice, in amaurosis, deafness, or epilepsy.

In this chronic form of the disease, the patient has only short intervals of ease. The palsied arm or leg shrinks very much, the muscles lose not only their natural size, but also their natural structure, and have been found converted into a suety substance.

Upon dissection, the intestines are found to be alternately contracted and dilated. The *Colica Pictonum* proves, in some cases, a more acute disorder; the tenesmus and pain in the belly being speedily succeeded by quickness of the pulse, heat in the skin, acute headache, hiccup, retching, bilious vomiting, delirium, and apoplexy, and, in a very few cases, this disease leads to inflammation and gangrene of the intestinal canal *.

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* The following is a list of authors upon the different kinds of colic:

Alberti (Michael), De Colica Hæmorrhoidali.—De Colica Hæmorrhoidali in Passionem Iliacam inclinante.
Troxel (Franc. Mathias), De Colica Spasmodica Scorbutica.
Hartleben, De Ileo Maxime per Spasmum.
Barthey (P. J.), Nouvelles Observations sur les Coliques Iliaques, qui sont essentiellement nerveuses. Memoires de la Societe Medicale d'Emulation, vol. iii.
Alberti (Henrie), De Colica Passione.
Vater (Abraham), Diss. De Passionibus Colicis et Iliacis prudenter avertendis et curandis.
Hoffmann (Frid.), De Intestinorum Doloribus.
Hernandez, Trattato del Dolor Colico.
Dahlhausen (Abrah. Henrie), Diss. De Doloribus Intestinorum vulgo Colicis dictis.
Hartmann (Petr. Innman), De Cardialgia Colicaque funesta ab ingestis orta.
De Bordeu (Theophile), Recherches sur le Traitement de la Colique Metallique à l'Hôpital de la Charité de Paris, 16th et 23d volumes of Journal de Médecine, rédigé par MM. Vandermonde et Roux.
Baker (Sir George), Essay concerning the cause of the Endemial Colic of Devonshire.

Of the Spasmodic Contraction of the Biliary Duct.

A spasmodic contraction of the biliary ducts is frequently induced by biliary concretions being lodged within these. Spasm of the biliary ducts, or of the duodenum, has been stated by authors to be a very frequent cause of jaundice.

But, in my opinion, the frequency of this cause has been very much overrated. I do not entertain the least doubt as to the muscular structure or muscular power of these ducts; yet they seem to possess the contractile muscular power in an inferior degree to the ureters, for stimuli applied externally to the gall-bladder, or to the common biliary duct of a living animal, do not excite such an evident motion or contraction, as takes place in the ureter.

Biliary concretions are very different in point of size, shape, and colour, as to their surface, and also as to their chemical ingredients. Of these several characters of biliary concretions, it is not my intention to enter into detail. I shall content myself merely by stating, that some biliary concretions are of so small a size as readily to pass through the biliary ducts, even where they retain their natural calibre, but others are so large, that, unless the ducts be of an extraordinary size, they must be retained within the biliary ducts. It is very remarkable how speedily the biliary ducts attain an unnatural bulk, after they have been obstructed. My Father made several experiments upon animals, in order to determine this point, and found, that, in the space of a few days, after throwing a ligature around the common biliary duct of a living sow, the ducts became ten times at least larger than in their sound state. Gall-stones are most frequently found at the entrance of the common duct into the duodenum, as at that place that duct is of a smaller diameter than elsewhere.

Gall-stones, however, sometimes stick in other portions of the common duct, and prove the cause of an irregular and inordinate contraction of that canal, as in Fig. 2. of the annexed engraving, Plate I. Gall-stones, while passing through the cystic duct, create pain and sickness of stomach, and also an unnatural slowness of the pulse; but do not prove a source of jaundice, as no more bile can be returned into the blood than that contained within the gall-bladder.

Atwek (Thom.), The Endemial Colic of Devonshire, caused by a solution of lead in the cyder.

De Haen (Anton) De Colica Pictonum.

Ludwig (Christ. Gottlib.), De Colica Saturnina.

Mérat (F. V.), Traité de la Colique Metallique, vulgairement appelée Colique des Peintres, des Plombiers, de Poitou; avec une Description de la Colique végétale, et un Mémoire sur le tremblement des doreurs sur metaux.

It is possible that, in consequence of the conical form of the biliary concretion, the bile may find its way into the gall bladder, but that the progress of the bile into the duodenum is interrupted, the gall-stone acting as a valve; thus the gall-bladder is repeatedly filled with bile from the common duct, and afterwards emptied by the absorbing vessels.

It may also happen, that, owing to the irregular shape of a biliary concretion, the same stone may, by accidental pressure, and by the flow of the bile, change its place within the common duct so much, as to interrupt or admit of the flow of bile into the duodenum in an irregular manner; and hence occasion the mistake of supposing that the jaundice is to be imputed to a succession of small stones, or to spasm, according to Lieutaud *. Lumbrici have also proved a cause of jaundice.

Gall-stones, impacted within the common biliary duct, create very acute lancinating pain at the pit of the stomach, which is limited to a small spot, accompanied by nausea, retching and vomiting,—and sometimes by colic, and pain at the top of the shoulder, and costiveness. Soon thereafter, the skin acquires a yellow hue, and also the different secreted fluids; while the fæces have neither their healthy smell nor colour. Notwithstanding the acuteness of the pain, it seldom or never gives rise to quickness of the pulse, or to inflammation.

I have frequently observed the above symptoms preceded by a sense of coldness and shivering.

A patient afflicted by the above symptoms, always sits up in bed, and with the body inclined forwards; he cannot bear to lie down, which aggravates the symptoms. In consequence of the duration of the disease, the body becomes much emaciated, and the yellow hue of the eyes is converted into a greenish black tint.

Of the Symptoms of Spasm in the Bladder of Urine.

Spasm in the bladder may, as above stated, proceed from various causes. The earlier symptoms of the disease are, a dull pain, accompanied by a sense of constriction in the organ affected; and this pain extends along the ureters, to the kidneys, loins and thighs. An itching of the glans penis, and frequent erections of the penis, are not unfrequent. The contracted bladder, by pressing upon the rectum, impedes the exit of the fæces, which is followed by pain in the belly, and considerable distention of the bowels. Owing to the continued impediment to the passage of urine, the valvular communication of the ureters is forced, and the urine regurgitates, and distends these canals, which is denoted by acute pain in the region of the kidneys. The patient has at the same time urinous sweats, and even his breath smells of urine. The spasm is sometimes succeeded by inflammation of the bladder, and, on other occasions, by giddiness, and by apoplectick symptoms.

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* Hist. Anat. Mem. tom. i. p. 211.

Of the Symptoms of the Hour-glass Contractions of the Bladder.

There are some symptoms which are characteristick of this peculiar state of the bladder. When a catheter is passed, only a few ounces of urine are discharged, because, by that instrument the contents of the lower cavity only are drawn off; and hence, by an accurate examination, a tumour may be always felt above the ossa pubis.

The late Dr Clark, however, informs us, that being aware of the contraction in the middle of the bladder, he passed a gum elastic catheter through the contracted portion, and thus drew off urine from both cavities of the bladder.

When the patient stands up, the upper chamber is sometimes emptied by the involuntary discharge of urine.

In the case which lately occurred in our hospital, under the charge of Dr Ballingall, the patient, a boy of five years of age, was said to have passed his urine with difficulty, and after having suffered excruciating pain when he was at the breast, and for some years afterwards,—but after his admission into the hospital, he passed his urine in a full stream to the extent of six ounces, and apparently without pain, and has also passed it frequently unobserved during the night.

In that case there was great difficulty in distinguishing the stone within the bladder,—one surgeon could not recognise it, and those who felt the stone (which proved, after having been extracted, to be a very large one *) supposed it to be very small; and it was only by introducing the forefinger of one hand into the rectum, and pushing it forwards, in the manner practised by Mr Allan, that the large size of the stone was discovered, through the parietes of the abdomen lying above the brim of the pelvis.

Of Spasm of the Neck of the Bladder.

A retention of urine is occasioned by a spasmodic contraction of the neck of the bladder, which is frequently combined with inflammation, or with gout. The bladder is a very irritable organ, and has a great degree of sympathy with the neighbouring organs; and hence spasm in the neck of the bladder is induced, not merely by stone, ulcer of the bladder, the tincture of cantharides, and other acrid, diuretic medicines, but also by stricture of the urethra, virulent gonorrhea, bruises on the perineum, inflamed intestines, fistula in ano, piles, and also from the menses being accumulated behind an imperforated hymen.

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* "The stone (says Dr Ballingall) was of an irregular plum shape, weighing, exclusive of many fragments, 13 drachms 1 scruple,—measuring, in its longitudinal diameter, upwards of 2 inches, and in its transverse diameter 1¼ inches.

Of the accompanying Symptoms.—When the neck of the bladder is spasmodically contracted, the perineum is to the touch tense and hard, and painful when pressed, the bladder is much distended, and the patient has very acute pain in the region of the neck of the bladder, and, after a violent effort, the urine comes off by drops.

When inflammation accompanies the spasm, there is fever, accompanied by acute burning pain in the perineum and hypogastric region, which is much increased on pressure. The passing a catheter creates great pain, and is often impossible. The body is much constipated, and there is considerable tenesmus.

When the inflammation has been of a few days duration, vomiting comes on, which is succeeded by drowsiness, and sometimes by delirium. The inflammation of the bladder sometimes ends in the discharge of purulent matter, and hectic fever.

Of the Spasmodic Contraction of the Urethra.

The longitudinal folds of the urethra are much more conspicuous in some than in other individuals. Mr Wilson's description and figure of these was taken from the urethra of a man who had suffered a violent death; but it does not appear to me, that Mr Wilson has proved these folds to be occasioned by the contraction of any set of peculiar muscular fibres, disposed on the mucous membrane which lines the urethra; and it may be added, that the longitudinal folds of the urethra, which have been supposed by Mr Wilson to be muscular fibres, and which pass along it in an irregular manner, are much less conspicuous after the urethra has been steeped in water, than immediately after death *.

The canal of the urethra being exposed, like other muscles, and also from peculiar function and peculiar situation, and from its sympathy with the bladder of urine, rectum, and prostate gland, to many causes of irritation, is very frequently spasmodically constricted; and the extent of the contraction is very various in different instances. If the contraction be partial, the urethra is affected in the same manner as if a tight ligature had been put around it.

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* Since the preceding sheet was printed, I have examined the structure of the urethra of the bear with attention, and remarked, that, in that animal, the folds upon the inner membrane of the urethra are larger, and more nearly of an uniform size, than in the human body. The animal had been poisoned by arsenic; an ounce of the white oxide had been given. Six hours elapsed before the animal died; but I could not in this instance see the muscular fibres beneath the mucous membrane of the urethra.

The inordinate contraction of a part of the urethra is sometimes followed by a certain degree of relaxation, or it takes place in its more aggravated form, from indulgence to excess in wine or spirits, from too frequent intercourse with women, from great bodily fatigue, or from external violence, or from the application of a blister, or from any cause which excites inflammation, as from astringent injections, or from small calculi being arrested in their progress through the urethra. The spasmodic stricture is more frequent in certain parts of the urethra, and especially beyond the bulb.

Of the accompanying Symptoms.—The patient has frequent calls to pass urine even at the commencement of the disease, and the stream is evidently less than in the sound state. In the progress of the disorder a stream of urine assumes a spiral or forked form; or in the more severe cases, is discharged in small jets, or dribbles off, which is accompanied by uneasy sensations in the neck of the bladder; and at length, little or no urine can be passed, even after much straining; and if any can be passed, it is tinged with blood. Thus the bladder is reduced to a very irritable state.

This aggravated form of the disease is accompanied by shivering fits, succeeded by heat, and flushing of the face, and sweating; or by symptoms somewhat similar to those of an ague. A degree of spasmodic stricture accompanies the permanent one; which latter is frequently the sequel of the former.

Of the Means of Cure.

In order to remove the spasmodic contraction of the passages for the food, the bile, and the urine, it is necessary to remove the cause of the irritation, if possible.

When much pain and irritation exist, the detraction of blood, and the use of a tepid bath, should precede the use of opium, and other antispasmodic remedies. Spasm is often combined with inflammation, and more especially when the bladder is spasmodically contracted, by the irritation of a stone lodged within it. If the patient be young and plethoric, the lancet proves highly beneficial; but if he be far advanced in life, and of a debilitated habit of body, in consequence of having been long afflicted by stone, or some other disease of the bladder, leeches are to be preferred. If leeches cannot be procured, the application of cupping-glasses to the loins has the effect of facilitating the introduction of the catheter, when its progress has been impeded by a spastic constriction of a part of the urethra. If the spasm be seated in the neck of the bladder, ureter, or urethra, the application of a number of leeches to the perineum is useful, together with the warm water clyster, and the liberal use of warm diluent and demulcent liquors, as linseed tea, or the decoction of althea; thus the acrimony of the urine is mitigated, and the spasm removed.

In the gall-stone jaundice, the patient experiences great relief from the application of bladders, filled by warm water, applied to the pit of the stomach. Of all antispasmodic remedies, opium is undoubtedly the best, and it is to be given by the mouth, or in the form of clyster, and in large doses. This remedy is of singular efficacy in spasmodic attacks of the gullet and intestines, in the gall-stone jaundice, and in the case of small stones lodged within the bladder of urine; and its antispasmodic virtue is very much increased, when combined with the warm bath, the temperature of which ought to be about the 96° of Fahr.; and it is necessary that the patient should remain in the bath for nearly an hour, in order that the remedy may have its full effect.

Before introducing an instrument into the urethra, and also before the operation of lithotomy, it seems to me to be always advisable to give a large dose of laudanum, not only to mitigate the excruciating pain of that operation, but also to facilitate the discovering the stone, and its extraction from the bladder; in the same manner as the application of the infusion of the extract of belladonna to the eyebrow or eyelids facilitates the extraction of a cataract.

The stone within the bladder is sometimes grasped, and firmly retained, by the contraction of the muscular fibres, after an incision has been made into that organ; but if a large dose of laudanum has been previously given, the extraction of the stone will be easily accomplished, and the danger of pinching the bladder by the forceps, which is frequently the cause of inflammation of the bladder, is averted. The *tinctura muriatis ferri*, as a means of removing spasm of the urethra, was introduced into notice by Mr Cline. He prescribed ten drops every ten minutes in a glass of water, until the urine comes away in a stream. When administered in the mode above mentioned, it powerfully affects the stomach, and from sympathy the other parts producing syncope, or a very near approach to it. This remedy has no effect, excepting in pure spasm.

Camphor is of peculiar efficacy in spasmodic disorders, when administered in large doses, according to Hoffmann and Pinel.

The former laborious physician has related the case of a hypochondriac, who, when in a very despondent state, on account of the death of his wife, was attacked by spasmodic constriction of the larynx, and top of the gullet. He could neither speak nor swallow, and breathed with difficulty. The spasmodic constriction of the gullet continued with great obstinacy; and if, by any chance, a portion of food slipped over the pharynx, it was immediately stopped, and prevented from entering the stomach. The patient was advised to take a mixture, containing 30 grains of camphor, with some olive oil, at intervals; but, by some chance, he *took it all at one dose*, by which he was completely cured.

Pinel prescribed camphorated liniment, consisting of a drachm of camphor, to an ounce of olive oil, as a remedy for a woman of 60 years of age, whose gullet was spasmodically contracted, which had been of six months duration. The patient *took the whole of the liniment at once, and was thereby cured.*

Blisters, and other external applications, are useful in the spasmodic contraction of the urethra, and of the stomach; but their effect is far inferior to the remedies which have been already mentioned; and it may be added, that, though blisters sometimes produce strangury, they remove the spasmodic contraction of the urethra.

Electricity, judiciously employed, is a remedy, which I have seen of singular efficacy in some spasmodic affections of the gullet.

Spasm of the urethra is often removed by the introduction of a bougie; but, if that instrument does not pass readily, it should not be forced forwards, but allowed to lie for five or ten minutes within the urethra, and then gradually pressed onwards; and, if it be introduced into the bladder, it should be allowed to remain there, till the patient has a desire to pass his urine; and when he is under that forcible contraction of the bladder, the bougie is to be withdrawn, and the stream of urine will follow it.

The use of laudanum, also, removes those sympathetic sensations in distant parts of the body, which are excited by any great irritation in the vicinity of the neck of the bladder of urine.

It is proper also to notice the great danger of inflammation of the bladder, and even of suppuration of that organ, when the surgeon has delayed too long to draw off the urine. In the earlier part of the disease, the introduction of a bougie is sufficient. The urine will flow as soon as the instrument is withdrawn; if that does not suffice, the elastic gum catheter is to be employed; and, as the late Mr Hey of Leeds has well observed, it should be introduced with the greatest gentleness. "When any obstruction occurs, the design of the surgeon should be to evade rather than overcome it. Unsuccessful attempts may render a case extremely difficult, which was not so before [*]."

I wish to impress upon the mind of my reader, that a moderate force, improperly directed, is capable of injuring the urethra in such a manner, as to render the operation almost (and without a just knowledge of the injury) if not altogether impracticable. He has concluded, by the following very judicious observations on the early introduction of the catheter. "Delay is not only fruitless in general, but also renders the operation more dangerous, as well as more difficult, and usually protracts the completion of the cure. Besides, the great danger of inflammation which the bladder suffers, when the extraction of the urine has been long delayed, brings on a suppuration in the part. I have seen many instances of this. The retention, indeed, has been cured, but a discharge of purulent matter has succeeded, and the patient has died tabid [†]."

When the bladder has been divided near to its middle into two sacs, by the spasmodic contraction of a portion of its muscular coat, and when a stone has been lodged within one of these, which proves a cause of very acute pain, and other violent symptoms, as in the case I lately saw in the hospital, under the charge of my colleague Dr Ballingall, it becomes necessary to have recourse to an operation; and I beg to refer my reader for further information on this head to Dr Ballingall's observations on the case above alluded to, which have been published in the second volume of the Medico-Chirurgical Transactions of this place [‡].

Alvine concretions are sometimes retained for some time within the rectum by a spasmodic contraction of that bowel, and while in that situation, they create great pain when the patient is sitting, or when he goes to stool.

In the more fortunate cases, after the concretion has remained for some time in such a situation, it is discharged by stool; but in other cases recourse must be had to the injection of warm olive-oil, and to the forceps,—as in the following case, which was communicated to my Father, by letter, by Mr R. Marshall, surgeon at Peebles.

"Dear Sir,—I herewith send to you two concretions or stones passed, I may rather say extracted, from the rectum. The patient, a lad of 17 years of age, says he has been in bad health for six years. He sent for me to the country lately, in a great hurry, to take away some hardened excrements, which he could not pass. He thought he must die instantly. After throwing up some warm oil, I extracted by the forceps one of the stones, and the other came away soon after without assistance. I am, Dear Sir, &c. Robt. Marshall."

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[*] Hey's Surgery.

[†] Baillie's Morbid Anatomy, and Engravings.

[‡] Wilson's Lectures on the Structure and Physiology of the Male, Urinary, and Genital Organs.

Small urinary calculi sometimes stick within the urethra of the male, and prove a source of great uneasiness.

By the application of warm flannel to the penis, or by immersing the penis for some time in water, and then injecting warm oil, the small stone or stones are sometimes discharged.

Stones in the urethra excite sharp pricking pain, and are obvious to the touch, or upon introducing a sound into the urethra. Different kinds of forceps have been contrived by Hales, Sanctorius and others, for extracting small stones from the urethra; but these are far inferior to the instrument for dilating the urethra by Weiss. Upon the dilatation of the urethra, the subsequent ingenious observations occur in Leroy's *exposé* of the different methods of removing urinary stones.

" Il est très-difficile de maintenir ce dilatateur dans un état de distension, ainsi que Ducamp lui-même l'avait observé. D'ailleurs, on peut, contre ce moyen, diriger un reproche semblable à celui que ce médecin faisait aux sondes et aux bougies cylindriques; même ce reproche serait plus grave; car, si les bougies et les sondes cylindriques distendent non-seulement le rétrécissement, mais encore la partie saine du canal, le dilatateur distend plus encore cette portion saine que la coarctation elle-même. Voulant, au mois de septembre dernier, me servir du dilatateur pour un rétrécissement situé à deux pouces et demi, je ne pouvais parvenir à maintenir le boyau de chat dans un état de dilatation, bien que j'y eusse poussé de l'air, puis de l'eau, ainsi que le conseille Ducamp. Je m'avisai d'un moyen qui me réussit dans cette circonstance et dans une autre semblable, l'un et l'autre rétrécissement existant près de l'entrée du canal. Je pris un bout de sonde de femme en argent, long de trois pouces, qui se trouva sous ma main. Après avoir égalisé, avec la lime et poli son extrémité fracturée, j'introduisis dans sa cavité le bout du boyau de chat que j'avois porté avec le stylet dans le point rétréci. Je fis une injection d'air; je nouai solidement l'ouverture du boyau; glissant alors sur lui la canule, je refoulai le fluide élastique et, augmentai la distension, agissant sur cette poche comme le serre-nœud de Dessault sur le fil qui embrasse la base d'un polype, et graduant à volonté la distension du rétrécissement, de même qu'avec le serre-nœud on augmente la constriction du pédicule de la tumeur. Cette modification, quoique très-peu importante, m'a paru avoir quelque avantage: elle simplifie l'appareil destiné à l'emploi du dilatateur; elle rend son action plus certaine, plus circonscrite, et, de plus, elle permet d'augmenter graduellement la dilatation avec la même quantité d'air ou de liquide."

From what has been stated above, as to the spasmodic constriction of the muscular coat of the passages for the food, the bile, and the urine, it follows,

First, That the contraction is various as to its extent, degree, and duration; and, when of long duration, it is sometimes succeeded by a permanent organic stricture.

Second, That the partial degree of contraction in the hollow bowels, gives rise to different symptoms, according to the part affected, proving, in some instances, fatal in a short space of time, as in the stomach and intestines, ureters, and neck of the bladder; but that, in other organs, life may be continued, though the spasm be in the middle of the womb, or middle of the body of the bladder, and though that spasmodic contraction be of considerable duration.

Third, That there is no peculiar arrangement of muscular fibres of the stomach, gall-bladder, or bladder of urine, or in the canals connected with them, which is adapted to produce a partial contraction of these passages.

Lastly, That though a muscular structure be not equally obvious in the different portions of the passages for the food, the bile, and the urine, yet they are all equally under the influence of antispasmodic remedies; and therefore, even though muscular fibres could not be distinguished by our imperfect senses, they are to be considered as parts endowed with a muscular structure.

Explanation of the Engraving, Plate I.

Fig. I. Of the annexed Plate gives an excellent view of the spasmodic contraction of the pharynx, larynx, and gullet, which sometimes, though not always, takes place in consequence of hydrophobia; and, it may be observed, that this spasmodic contraction did not go off after the death of the patient. It may be observed, that the tonsils seem, in the engraving, to be unusually prominent, which I presume is to be imputed to the spasmodic contraction of the muscles around them. In the engraving the spasmodic contraction of the constrictor isthmii faucium is well represented.

The inner membrane was of a brilliant red colour. It may not be out of place to add, that I met with another instance of hydrophobia, in which the morbid appearance in the pharynx and larynx were exactly similar to those above described.

1, 1. Point out the Velum Pendulum Palati, which is very unequal on its surface, on account of the spasmodic constriction of the constrictor isthmii faucium, as pointed out by No. 2.

The Uvula is seen hanging down from the velum pendulum palati; the surface of it is also corrugated by the contraction of the azygos uvulæ muscle.

3, 3. Point out the Tonsils, which in this case were remarkably prominent.

4, 5. Point out portions of the Pharynx, turned back. The pharynx was opened from behind to shew the larynx, the membrane proper to which was thrown into a number of folds. The larynx was opened, so that the state of the mucous membrane which lines it may be seen; it was found to be of a deep crimson colour.

6. Points out a portion of the Gullet.

Fig. II. This figure was copied from a preparation, in which the cystic, hepatic, and common ducts, were very much enlarged, in consequence of gall-stones being lodged within them. The enlargement is much greater at some than in other parts of those ducts.

1, 1. A string which suspends the gall-bladder, marked by No. 2, 2.

3. Marks a remarkable dilatation of the Cystic Duct.

4. Points out the Hepatic Duct, which was much enlarged.

6, 6. Point out two Gall-Stones, which are lodged in the common duct.

7, 8. Point out two small probes, which were passed through the common duct in its oblique course, between the coats of the duodenum.

This portion of the common duct, which is naturally of smaller diameter than any other portion of the common duct, has been excessively enlarged, in consequence of gall-stones having been lodged within it; and it merits particular mention, that gall-stones impacted within the common duct frequently prove a cause of death.

9, 9. Two portions of string, by which the part of the duodenum which had been opened is suspended.

Cases of Apoplexy. By WILLIAM SHANAHAN, M. B. T. D. C. In a Letter to the Editors.

GENTLEMEN,

YOU will oblige me by publishing in your Journal the following cases of Apoplexy, which have been selected from a considerable number, in order to exhibit this destructive disease both in its unmixed form, and in combination with other important maladies. The ordinary character of apoplectic invasion is exemplified by three cases, concisely detailed, in which the symptoms were of unequal violence: the union of apoplexy with epilepsy is illustrated by two cases; and the remaining four exhibit its complication with disease of the bronchial membrane, by which the danger is augmented, whilst the practical measures adopted for its removal are modified and controlled. I am, gentlemen, with great respect, your obedient servant,

WILLIAM SHANAHAN.

KILKENNY,
April 18. 1826.

CASE.—*Apoplexy, followed by Acute Bronchitis.*

25th February, 1820, 11. P. M.—I was hastily summoned to the assistance of Mr Thomas Kehoe, gardener to the late Marquis of Ormonde; the messenger told me that he was *poisoned*. I found him supported in an arm-chair by three men; his countenance was livid; the lips were pale; the pupils dilated; the breathing slow, laborious, and stertorous; he was profoundly comatose; the entire surface of the skin was singularly pallid, damp, and of a death-like coldness; no pulsation could be perceived in the radial, temporal, or carotid arteries. A slight *rattling* sound was observable during respiration. His relatives informed me that he was a healthy man, in his 29th year, of temperate habits, of great personal strength *, and accustomed to much exertion; that, during the whole of that day, he had suffered from a severe tensive pain in his head, attended with an unusual dulness; that in the evening he had been persuaded to accompany some friends to a distillery, where the clerk furnished them with a liberal supply of new spirits, which they drank undiluted. On his return through the streets, Kehoe suddenly fell to the ground in a state of insensibility, and was removed by his companions into an adjoining public house, where, on the supposition of his being poisoned by the deleterious quality of the *new* spirits, they poured down his throat a large boatful of melted butter, which, they remarked, he swallowed with great difficulty. Failing in this attempt to excite vomiting, they stripped off all his clothes, and dashed upon him *several* pails of pump-water without effect: they then became exceedingly terrified, and carried him to his own house. By my direction he was laid in bed, and friction was diligently applied to the limbs; the following sharp clyster was injected without delay:

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* His stature considerably exceeds six feet, and he is proportionally robust.

pain in the region of the kidneys. The patient has at the same time urinous sweats, and even his breath smells of urine. The spasm is sometimes succeeded by inflammation of the bladder, and, on other occasions, by giddiness, and by apoplectick symptoms.

Of the Symptoms of the Hour-glass Contractions of the Bladder.

There are some symptoms which are characteristick of this peculiar state of the bladder. When a catheter is passed, only a few ounces of urine are discharged, because, by that instrument the contents of the lower cavity only are drawn off; and hence, by an accurate examination, a tumour may be always felt above the ossa pubis.

The late Dr Clark, however, informs us, that being aware of the contraction in the middle of the bladder, he passed a gum elastic catheter through the contracted portion, and thus drew off urine from both cavities of the bladder.

When the patient stands up, the upper chamber is sometimes emptied by the involuntary discharge of urine.

In the case which lately occurred in our hospital, under the charge of Dr Ballingall, the patient, a boy of five years of age, was said to have passed his urine with difficulty, and after having suffered excruciating pain when he was at the breast, and for some years afterwards,—but after his admission into the hospital, he passed his urine in a full stream to the extent of six ounces, and apparently without pain, and has also passed it frequently unobserved during the night.

In that case there was great difficulty in distinguishing the stone within the bladder,—one surgeon could not recognise it, and those who felt the stone (which proved, after having been extracted, to be a very large one [*]) supposed it to be very small; and it was only by introducing the forefinger of one hand into the rectum, and pushing it forwards, in the manner practised by Mr Allan, that the large size of the stone was discovered, through the parietes of the abdomen lying above the brim of the pelvis.

Of Spasm of the Neck of the Bladder.

A retention of urine is occasioned by a spasmodic contraction of the neck of the bladder, which is frequently combined with inflammation, or with gout. The bladder is a very irritable organ, and has a great degree of sympathy with the neighbouring organs; and hence spasm in the neck of the bladder is induced, not merely by stone, ulcer of the bladder, the tincture of cantharides, and other acrid, diuretic medicines, but also by stricture of the urethra, virulent gonorrhea, bruises on the perineum, inflamed intestines, fistula in ano, piles, and also from the menses being accumulated behind an imperforated hymen.

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[*] "The stone (says Dr Ballingall) was of an irregular plum shape, weighing, exclusive of many fragments, 13 drachms 1 scruple,—measuring, in its longitudinal diameter, upwards of 2 inches, and in its transverse diameter 1¼ inches.

Of the accompanying Symptoms.—When the neck of the bladder is spasmodically contracted, the perineum is to the touch tense and hard, and painful when pressed, the bladder is much distended, and the patient has very acute pain in the region of the neck of the bladder, and, after a violent effort, the urine comes off by drops.

When inflammation accompanies the spasm, there is fever, accompanied by acute burning pain in the perineum and hypogastric region, which is much increased on pressure. The passing a catheter creates great pain, and is often impossible. The body is much constipated, and there is considerable tenesmus.

When the inflammation has been of a few days duration, vomiting comes on, which is succeeded by drowsiness, and sometimes by delirium. The inflammation of the bladder sometimes ends in the discharge of purulent matter, and hectic fever.

Of the Spasmodic Contraction of the Urethra.

The longitudinal folds of the urethra are much more conspicuous in some than in other individuals. Mr Wilson's description and figure of these was taken from the urethra of a man who had suffered a violent death; but it does not appear to me, that Mr Wilson has proved these folds to be occasioned by the contraction of any set of peculiar muscular fibres, disposed on the mucous membrane which lines the urethra; and it may be added, that the longitudinal folds of the urethra, which have been supposed by Mr Wilson to be muscular fibres, and which pass along it in an irregular manner, are much less conspicuous after the urethra has been steeped in water, than immediately after death *.

The canal of the urethra being exposed, like other muscles, and also from peculiar function and peculiar situation, and from its sympathy with the bladder of urine, rectum, and prostate

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* Since the preceding sheet was printed, I have examined the structure of the urethra of the bear with attention, and remarked, that, in that animal, the folds upon the inner membrane of the urethra are larger, and more nearly of an uniform size, than in the human body. The animal had been poisoned by arsenic; an ounce of the white oxide had been given. Six hours elapsed before the animal died; but I could not in this instance see the muscular fibres beneath the mucous membrane of the urethra.

pulse 96 and sharp; the rattle in his breathing was accompanied by a frequent, short, dry cough, and by pains in the chest. The purgative medicines had acted well, and discharged a large quantity of dark offensive feces and watery stools. I ordered several leeches to his temples, a warm pediluvium, a blister to the nucha colli, and this powder to be taken every third hour: ℞ Calomelanos pulveris antimonialis, ā ā, gr. iij; nitratis potassæ gr. viij; sacchari albi ℈ss. M.; fiat pulvis.

27th, 10 A. M.—He had taken five powders, and had perspired freely; his bowels had been moved thrice; the headache was much less, but the other feverish symptoms were unabated; every part of his chest was now afflicted by sharp, darting pains, aggravated by a dry, harsh, frequent cough, and the *rattle* was loud and distressing. Observing acute bronchitis to be developed so unequivocally, I took 30 ounces of blood from his arm by a large orifice; this evacuation caused considerable debility, and lowered the pulse from 102 to 88. A large blister to the chest, and a repetition of the powders, with a grain of ipecacuanha added to each, were prescribed, with a free use of diluents.

8 P. M.—His breathing was now more hurried, and the fever ran very high; his distress was so urgent that he sat bolstered upright in his bed from the dread of suffocation; he was racked by harsh, loud cough; and pungent pains darted throughout every part of the chest. Venesection to the amount of 30 ounces relieved his breathing; a large blister was applied between the scapulæ, and the powders were directed to be continued.

28th, 10 A. M.—He had been harassed through the whole of a wretched night by incessant cough, and the expectoration of thick puriform sputa to an enormous amount, very far exceeding any discharge which I have ever observed in acute catarrh; extreme anxiety and terror were depicted in his features, and he told me that he was a dead man. Although secretion had become so fully established, yet the quick, sharp pulse (about 108), hot skin, harsh cough, hurried respiration, and severe thoracic pains, indicated the presence of coexistent inflammation, and decided my adoption of the appropriate plan of treatment. With great difficulty I overcame the opposition made by the patient and his friends, and obtained their consent to a venesection, by which I abstracted 24 ounces of blood; complete syncope ensued, and lasted so long as to alarm me lest fatal convulsions should supervene. Cold water was dashed on his face, and he slowly recovered from this state of exhaustion, which was succeeded by a marked diminution of suffering. I directed that the calomel should be omitted from his powders.

9 P. M.—He was evidently improved, and had frequently obtained short intervals of sleep during the day; his bowels were

open; skin relaxed and warm; tongue moist; pulse 92, full, but not hard; the severity of the cough, the profuseness of the expectoration, and the thoracic pains, were abated; the urine was less loaded, and more abundantly secreted.

29th, 10 A. M.—He was better in all respects, but still annoyed by troublesome pains in his chest. A large blister was therefore applied over the sternum, although the skin was not healed; and the following mixture was prescribed: ℞ Assæfœtidæ ʒj; solve in aqua menthæ sativæ ℥vij; adde oxymellis scillæ ℥ss; vini ipecacuanhæ ʒiij; fiat mistura, cujus sumat ℥j horis tertiis. The powders were discontinued.

8 P. M.—He felt some relief from the pains, and expectorated with less effort; his pulse was soft and full, beating 84; skin moist; tongue cleaning at the edges; no alteration was made in his medicines.

1st March, 11 A. M.—Notwithstanding the irritation caused by the blister, he had obtained several hours' sleep, and was much refreshed; his countenance looked cheerful, and he now expressed great confidence of a recovery. The blister had caused a profuse discharge, with almost complete removal of the thoracic pains, and manifest abatement of cough and expectoration. He was desired to persevere in the use of the fetid mixture, to which were added three drachms of paregoric elixir. From this morning his improvement was rapidly progressive; on the 5th of March he exchanged his gruel and flummery for beef-tea and chicken-broth; on the 7th he ate solid animal food; and on the next day my attendance of this very critical case terminated. He resumed his usual occupations in the course of a fortnight. I have since frequently met with this patient, who declares that he has not subsequently experienced any tendency to diseases of his head or chest. He appears to enjoy excellent health, and is at present employed in the service of a nobleman residing within a few miles of this city.

Observations.—This case exemplifies, in a signal degree, the noxious influence which adventitious circumstances frequently exert in the modification of disease; for, to the gross mismanagement to which this patient was subjected, we must attribute the augmented violence and intractability of the symptoms, and the unusual combination of *congestion* and *collapse.* Determination to the brain had been marked by the constrictive headache; and the stimulus of ardent spirits readily produced an apoplectic *engorgement* in the vascular apparatus of this organ. The repeated affusion of cold water, in large quantities, repelled the blood from the surface, increased the internal * congestion in the large vessels, and depressed to an alarming degree the powers of life. These embarrassing circumstances are generally considered to prohibit the use of the lancet; yet, in this instance, large and repeated bloodlettings (performed whilst the surface of the body resembled that of a *drowned person*) were highly efficacious. The singularly violent attack of acute bronchitis may have arisen from a translation * of morbific action, or from the overloaded condition of the pulmonary vessels, caused by the complete refrigeration of the surface, and interruption of the cutaneous circulation; but it appeared chiefly to originate in the inflammation of the trachea and its ramifications, excited by fluid introduced into the rima glottidis. To the irritation caused by this *foreign substance*, may be attributed the unparalleled rapidity and profuseness of the purulent secretion †.

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* It is probable a correct supposition that apoplexy is the real source of destruction to *many* individuals who are believed to perish in the water from the effects of cramp.

A question of great practical interest here presents itself to our consideration, namely, What measure should be *first* adopted in the management of such a case as Kehoe's? A warm bath might probably prove more serviceable than frictions. Could the extraction of the ardent spirits by a stomach-pump remove or diminish the affection of the brain? Is the exhibition of emetic medicines *safe*, although sanctioned in the instance of inebriated persons by the very high authority of Dr Paris? (See Medical Jurisprudence, vol. ii. page 439.) There is great danger of thus exciting an *imperfect* act of vomiting, in which a portion of the stomach's contents may be forced into the larynx, and cause speedy suffocation; and in page 58. of the same volume are noticed fatal instances of this accident occurring, from the *spontaneous* rejection of ingesta during a state of insensibility. In page 436 it is asserted that Mr Brodie has observed a striking analogy between the symptoms arising from a large potation of spirits, and those produced by injuries of the brain. In the treatment of ordinary apoplexy, practitioners have long since abandoned the use of emetic drugs, from the dread of their action increasing the distention of the cerebral vessels. It appears therefore probable, that the use of such remedies is full of danger to persons insensible from inebriation. Can it be supposed that the evacuation of noxious ingesta is capable of moderating the symptoms of apoplexy when once fully developed? We are frequently enabled to ascertain, from the previous history of the patient's state of health, that an evident predisposition to cerebral disease, has facilitated the injurious agency of intemperance.

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* I will here briefly notice a few interesting examples of this occurrence, which have fallen under my own observation. In September 1823, I attended a gentleman, of broken constitution, who was afflicted with a painful diarrhea, the mucous membrane of the bowels being considerably inflamed; it ceased suddenly, and was at once succeeded by a severe and intractable pulmonary disease, threatening hydrothorax, which unexpectedly disappeared, but was followed by delirium, and fatal extravasation in the brain. In February 1821, a young female suffered a formidable attack of pleurisy, which was subdued by a free use of the lancet; bilious fever succeeded. When convalescent for some days, she was seized by a most violent gastritis, and, in the act of vomiting, was instantaneously destroyed by the rupture of a large internal bloodvessel. In 1820, the late Dr Michael Ryan, of this city, attended a delicate female, who suffered, in quick succession, attacks of enteritis, phrenitis, pneumonia, and hysteritis, which were combated by the most vigorous antiphlogistic measures: when convalescent for a few days, she was suddenly seized by apoplexy, which proved immediately fatal.

† Digitalis was not exhibited, because I have *never* found it efficacious in the control of arterial excitement.

CASE.—*Sanguineous Apoplexy.*

In June 1816 I witnessed an apoplectic seizure in the person of a plethoric gentleman, middle aged, and subject for some years to vertiginous affections. Whilst he conversed after dinner with some friends, I remarked that his face was flushed, and his manner excited, although he had not exceeded three or four glasses of wine; he complained that the room felt close and heated, and of uncomfortable sensations about his head. After a short time he called to me in a loud tone of alarm, suddenly threw up his hands to his head, and was falling from his chair, when caught and supported. In one minute he was insensible. I immediately bled him largely, and dashed cold water on his face. These measures rescued him from impending danger; and, by the free use of active cathartics, he was restored, in a few days, to his ordinary state of health.

CASE.—*Sanguineous Apoplexy.*

In July 1818, Mr D. Brennan, cooper, aged 52 years, strongly formed, with ample chest and head, healthy, and of temperate habits, when preparing to accompany a funeral, drank a single glass of raw spirits; the day was sultry, and his house was much thronged. In less than 20 minutes he fell from his chair completely insensible. My friend Dr Pack and myself were immediately summoned to his assistance, and found him comatose, his breathing stertorous, his face flushed, skin warm, the pulse labouring slow and full. The temporal artery was instantly opened, bled freely, and with such effect that coma was speedily removed; he knew his relatives at his bed-side, and moved his limbs with considerable freedom; but he complained of pain in his head, and appeared confused and lethargic. A sharp purgative clyster was injected; active cathartics were exhibited in full doses; the head was shaved, and covered with linens wetted with a refrigerant lotion. At our evening visit, arteriotomy was repeated, with a palpable improvement of the symptoms, which continued for about 20 hours; but, on the following evening, we found him very feverish and restless, with hot skin, dry tongue, a frequent and hard pulse, headache, and drowsiness; a large bloodletting, and free purging, removed the impending mischief. This case required to be watched very closely, as the *apoplectic impulse* was frequently renewed, and controlled by general and topical bloodletting, blisters, and purgative medicines. He was not permitted to use broth until the 9th day. His recovery was perfect; and hitherto no tendency to disease of the head has manifested itself.

Case.—*Sanguineous Apoplexy.*

In October 1812, an athletic young man, employed in an iron-foundery near the Phœnix Park, swallowed at one draught almost a pint of undiluted spirits; in a short time he fell to the ground insensible, and was immediately conveyed to Steevens's Hospital. Profound coma, *snorting* respiration, dilated pupils, violent and incessant convulsive movements of the *left* upper and lower extremities, whilst those of the right side were completely paralysed, were the prominent features of an apoplectic seizure, which defied profuse and repeated bleedings from both temporal arteries and one of the jugular veins: death took place in ten hours. His relatives would not permit the head to be examined *.

Case.—*Epileptick Apoplexy.*

23d August 1815.—I was called to J. C. Esq. aged 27 years, habitually epileptic. He had taken much exercise in the fields during the hottest part of a sultry day, and whilst engaged in his excursion, had eaten a large quantity of cakes and indifferent fruits. On his return home he made a full dinner, and drank some wine and punch; in the course of the evening he was suddenly seized with well-marked apoplexy, which was speedily removed by one large bleeding, which was followed by the usual exhibition of active cathartics until health was re-established. Some practitioners entertain an opinion that in such cases † venesection is forbidden by the constitutional malady, as likely to produce sudden prostration and convulsions; and, undoubtedly, the prudent physician will pay proper regard to the influence which a peculiar condition of the system must exert in *always* modifying, and *occasionally* masking, the character of disease, in gouty, hysteric, and epileptic individuals; yet, when such persons are assailed by visceral inflammation, or any malady which threatens life, the only safe and rational practice consists in an unrestrained and decisive adoption of appropriate remedies.

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* This case is a good example of the *Apoplexia fortis* of Wepfer and Lancisi. I have seen equally violent symptoms following upon a sudden repulsion of the catamenia, in a young *plethoric* woman. In a delicate lady a formidable attack of pneumonia was induced by a similar retrocession. In an athletic young man suppressed epistaxis was followed by fatal enteritis.

† The late Dr Michael Ryan, a justly eminent practitioner of this city, published, in an early volume of the Medical and Physical Journal, some valuable observations on this species of apoplexy, in which he advocates the free use of depletory measures, and reports the case of a lady of high rank, in which this bold practice was successful.

CASE.—*Epileptick Apoplexy.*

14th December 1825.—I was requested to visit James Holmes, a pauper confined in the work-house of this city, afflicted from infancy by frequent and violent epileptic fits. The attending apothecary had bled him freely about two hours previous to my visit, at which time his condition appeared nearly desperate: he was comatose; the pupils were dilated; *the skin cold*; the breathing stertorous and hurried; the pulse feeble, rapid, and irregular. An enema, sharpened by tinctura aloës and oleum terebinthinae was rejected; sinapisms were applied to the soles of the feet; blisters to the inside of the legs, and to the nucha colli; and drastic purgatives were directed to be exhibited in the event of his regaining the power of deglutition. The enema acted with much effect upon the bowels, and insensibility was so much diminished that he was soon able to swallow a bolus of calomel and jalap: the bad symptoms gradually disappeared, and he was discharged in the course of a few days.

CASE.—*Bronchitis, combined with Apoplectick Congestion.*

4th August 1822.—Early in the morning I was called to Mrs Mary Steevens, aged 80 years, corpulent, and subject to chronic pulmonary catarrh, which had been unusually severe for some days: in the course of the preceding night she became affected with considerable stupor, from which she could be roused with difficulty even for a few seconds. Her face was turgid; her eyes were loaded with dark vessels; the breathing slightly stertorous; the tongue brown and dry; the pulse feeble and oppressed; the bowels costive. I ordered six leeches to the temples; a purgative enema to be injected; a blister to the nucha colli; and the mustard fomentation to the legs and feet every 8th hour. These measures, aided by suitable cathartic medicines, removed the symptoms of cerebral oppression: the pulmonary distress was alleviated by stimulant expectorants, to which was joined the carbonas ammoniæ.

Observations.—The particulars of the preceding case, in which the threatening symptoms soon yielded to remedies of the mildest description, are reported for the purpose of affording a striking contrast to the progress of the *same* disease in another individual. The torpid condition of the brain, above noticed, is of ordinary occurrence in bad typhus; and constitutes the principal danger in peripneumonia notha: it appears to depend on the gorged state of the membrane which lines the air tubes, and a consequent imperfect arterialization of the blood. In the succeeding report, a tremendous assemblage of the worst symptoms, originating from this source, will be found to characterize one of the most extraordinary cases which have fallen within my limited observation.

CASE.—*Bronchitis, followed by Apoplexy.*

21st January 1824.—I visited Mr N. C., one of the coroners of this city, aged 74, subject for many years to chronic pulmonary catarrh, occasionally aggravated to a distressing degree. During the four preceding days he had suffered much from dyspnea, and a profuse secretion of mucus, with difficult expectoration. On the 20th, the bronchia became surcharged, and a severe tensive headache distressed him in the evening; at night he became *delirious*: in this state I found him with a weak and intermittent pulse; the breathing dreadfully oppressed, quick, and *rattling;* the surface *cold* and livid; the abdomen tumid; the bowels very constipated; the urine scanty, and much loaded. When roused by my questions he said, that he had lost all feeling both in body and limbs; thus expressing the extraordinary torpor which formed the prominent feature of his case. His eyes were bloodshot and dull; the tongue was dry and dark-coloured, yet he was *not thirsty.* I ordered ten leeches to his temples; six pills containing twelve grains of calomel, and a scruple of the cathartic extract, to be taken, two every hours; a terebinthinate enema to be injected; the stupe, composed of mustard-flour and horse-radish, to be applied to his feet every sixth hour; and a blister to the nape of his neck. The leeches acted well; and the bowels were cleared of immense quantities of dark offensive feces, by the cathartic pills. On the 22d he was less delirious, and more conscious of his situation; the pain in his head was abated; he complained of the smarting sensation caused by the stupe; the belly was less swoln; the skin was warmer; more urine was discharged; the intermission of the pulse was still very remarkable, and he was harassed by dyspnœa and difficulty of expectoration. He was ordered to take, every fourth hour, a powder, containing two grains of calomel, an equal quantity of pulvis jacobi, and half a grain of ipecacuanha; and to take occasionally a table-spoonful of this expectorant mixture: ℞. Lactis assæfœtidæ, jalapi e camphorâ, āā., ℥iij.; carbonatis ammoniæ ʒss.; ætheris vitriolici, spiritûs ammoniæ compositi, *utriusque,* ʒij.; fiat mistura. A large blister was laid upon his chest; and the stupes were ordered to be continued. The following purgative draught was prescribed, and frequently used throughout the course of this tedious illness: ℞. Aquæ menthæ piperitae, olei ricini, āā., ʒvj.; olei terebinthinæ rectificati, ʒiss.; tincturæ jalapæ, ʒj. M. Fiat haustus mane crastino exhibendus.—23d. He was much better; the pulse firmer and less irregular, and an increased warmth of the surface proved that the distribution of the blood was becoming equalized; the belly was less tumefied; the delirium and dyspnoea were materially diminished; expectoration, although profuse, was effected with tolerable ease; he moved his limbs with some freedom, and the attendants remarked that he was not such a dead weight on their hands. These favourable appearances continued for a few days, without any further improvement of the pulse; but during the night of the 28th, his lungs became again severely affected by dyspnoea and difficult expectoration; the apoplectic condition of the brain was rapidly re-established. On the 29th his state was almost hopeless; the pulse was *scattered*, excessively intermittent, and easily compressible; he was alternately delirious and comatose; his eyes were gorged with dark bloodvessels; the breathing extremely oppressed, and very rattling; the epigastric region was tender and tumefied. I directed blisters to be applied along the inside of the legs; sinapisms (rendered acrid by garlic and spirits of turpentine) to his feet; a blister of unusual magnitude to the chest; cathartic medicines to be given in free doses; and sharp enemata to be frequently injected. These remedies were totally unavailing; and for three days the condition of the patient bore a strong resemblance to that observed in the worst stage of malignant typhus. He lay torpid and insensible, as if stricken by universal paralysis; the urine and feces were discharged unconsciously; the extremities were quite cold; the face livid; the lips and teeth were covered with dark sordes; the tongue brown, dry, and fissured; the tendons* projecting; the pulse fluttering and intermittent; the abdomen enormously puffed; the eyes almost closed by a secretion of viscid fluid; and the breathing was hurried to an extreme degree, whilst the bronchia were oppressed by accumulated mucus. Although his death was hourly expected, yet, as he fortunately still retained the power of deglutition, camphor mixture, ether, ammonia, and aromatic confection, were liberally given; and three or four glasses of wine were allowed in the course of each day. On the 2d of February, the attending apothecary requested me to visit this patient, in whose state he thought that a slight improvement had occurred since the preceding day. This opinion was well founded; for the pulse was evidently less intermittent and more distinct; the coldness of the extremities was diminished; the breathing was less hurried; although he still lay motionless, yet he was less insensible, and his *aspect* was manifestly better: in fact, the constitution was making an unexpected rally. Suffice it to say that insensibility gradually disappeared, and improvement of all the symptoms progressively took place. On the 6th, *reaction* displayed itself in a hot skin, sharp and quick pulse, headache, thirst, and inflammation of the conjunctivæ; but readily yielded to leeches, purgatives, and antimonials. On the 11th, a tendency to stupor again appeared, accompanied by intermission of the pulse, some dyspnœa, and bronchial oppression; the epigastrium was tender on pressure, and puffed; the conjunctiva was inflamed, and poured out a considerable secretion, by which the tarsi were agglutinated; the bowels were confined.

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* When this symptom occurs in fever, it denotes extreme prostration, and is generally followed by subsultus tendinum.

Ten leeches were applied over the hepatic region, which was afterwards blistered; pills of calomel, antimonial powder, and extract of colocynth were administered, and assisted by saline purgatives; a blister was applied upon the nape of the neck, and the mustard fomentations to the feet were resumed. These remedies proved very beneficial; the head was much relieved, and the strength did not sink under the depletion which removed the symptoms of hepatitis; and by a combination of carbonate of ammonia with lac assæfœtidæ, and ipecacuan wine, the excretion of the bronchial mucus was greatly facilitated. After the 15th convalescence became fully established, he left his bed on the 24th, much enfeebled and affected with hemiplegia*, which, in the course of the ensuing half year, spontaneously disappeared. Latterly, his general state of health is better than it had been for some years previous to this formidable and protracted illness.

Observations.—The fortunate event of this remarkable case is to be classed amongst those extraordinary recoveries which are not attributable to the successful efforts of medical art, but to the conservative energies of the human constitution. At the first visit my prognosis was unfavourable, being founded upon the alarming state of the bronchial membrane, and consequent depravation of the essential qualities of the blood, the uniform forerunners of complete collapse. The gorged condition of the cerebral vessels strongly threatened a rupture and effusion on the brain; this event, however, did not take place until after the relapse of the 28th, when the patient became motionless and paralytic†. During many days, the treatment resembled that adopted in the sinking stage of malignant fever, when we are compelled to disregard every contra-indication, derived from the congestions existing in particular organs, and direct all our efforts to support artificially the powers of life, by cordial stimulant medicines, blisters, sinapisms and wine. This practice, confessedly empirical, is often signally efficacious, in enabling the constitution to rally and emerge from a state of extreme prostration; which fact furnishes one of the most convincing arguments against the plausible deductions of that narrow and delusive theory which identifies fever with inflammation*.

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* I have known three other examples of the *spontaneous* cure of paralysis more severe and of longer duration, than in the present instance. In August 1821, I attended a man in sanguineous apoplexy, which was speedily subdued by arteriotomy and other suitable remedies; but was succeeded by very bad hemiplegia, which remained unaltered for four years, but can now be scarcely recognized.

† The severity and long duration of the paralysis, leave no doubt on my mind that it was caused by *bloody* extravasation, not by effusion of lymph.

CASE.—*Pulmonary disease, succeeded by Apoplectick Congestion.*

3d January 1824.—I visited R. R. Esq. aged 49, residing in the country, accustomed to eat very largely of animal food, and to indulge in an intemperate use of wine and spirits; of robust form, with large head, short neck, and ample chest. He had been under my care in the preceding September, when affected with a painful sense of constriction, under the sternum, with cough, and some dyspnœa, which symptoms had come on soon after the healing of a seton in the neck, worn for some years, in consequence of his having suffered an apoplectic stroke, attended wtih hemiplegia, which was still slightly discernible. One venesection, some topical depletion, and repeated blisters to the chest, were productive of complete relief. The following pills and mixture were prescribed, on account of tenderness and puffing of the epigastrium; ℞. mass. pil. hydrargyri; pil. gambogiæ compos.; extract. colocynth. comp. āā. ℈ij. ol. menthæ gtt. v; contunde, ut fiat massa in pilulas xxiv. distribuenda, quarum sumat duas singulis noctibus.

℞ Electuarii scammoniæ ʒij; magnesiæ vitriolatæ ℥iss; solve in infusi sennæ ℥viij; adde tincturae jalapæ ℥ss.; fiat mistura, cujus sumat cyathum vinosum omni mane.

I urged him to permit the reinsertion of a seton in his neck, which he peremptorily refused; but, on learning that I feared a recurrence of apoplexy, he adhered, for some time, to a restricted regimen, and the frequent use of active purgatives. Finding his health improved, he gradually returned to his former habits of intemperance, to which was added an immoderate indulgence in sleep. A very plethoric condition of the system was thus re-established, which soon induced a determination—not to the lungs—but to the brain, causing vertigo, impaired vision, flashings before the eyes, and tinnitus aurium, with a considerable degree of lethargic oppression. His medical attendant in the country had used active measures for his relief, but in vain: on the day preceding my visit 20 ounces of blood had been abstracted by arteriotomy, without the slightest benefit. I found him in a state of the utmost excitement and anxiety; with much confusion of intellect; severe tensive pain of the head; inability to move without support, or even to apply his feet fairly upon the ground, so impaired was the sense of feeling; his articulation was so imperfect that his words were nearly unintelligible; the pulse was 104, sharp and corded. To avert the impending danger of an apoplectic stroke, I took from the right temporal artery 40 ounces of blood, which were discharged with great rapidity: complete *deliquium** followed this depletion, and a decisive impression was thereby effected upon the disease. In the course of an hour, his pulse settled at 76, was soft, full, and of moderate strength; his head was greatly relieved from pain and tightness; he spoke with more distinctness, having lost much of that cerebral oppression which had embarrassed his enunciation, and was undoubtedly much improved. Active cathartics (mercurial, resinous, and saline) were prescribed in such free doses as to promote, and discharge, large secretions from the intestinal canal; blisters were applied behind the ears, and to the nape of the neck, in which a seton was subsequently inserted; a very restricted regimen was enjoined, cool apartments were recommended, and he was desired to abridge his usual allowance of sleep to six hours. These measures proved so beneficial that his pulse did not again exceed 80, and he was sufficiently recovered in the course of a week, to leave his house. During the two succeeding months this gentleman occasionally consulted me, and appeared very solicitous about his health; but with improved strength, his intemperate habits returned, and before long he ceased to seek, or to regard medical advice. His relatives informed me, that, from this period, the unrestrained indulgence of his appetite produced several alarming affections of the head, the usual premonitory symptoms which announce the future result of long continued determination to the brain. On the ensuing 25th of December, he ate a very heavy dinner, and in less than half an hour after the conclusion of this meal, he was seized with an apoplectic stroke, by which life was almost instantaneously extinguished. Thus

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* In fever the phenomena arise from a general *irritation of the whole system*, with peculiar depression of the sensorial powers, and impaired functions of the various organs: in the phlegmasiæ, the violent arterial excitement tends uniformly to produce structural disorganization. The *post mortem* appearances are widely dissimilar. I refer, with much satisfaction, to the masterly essay on the Doctrines of Fever, by Dr Brown, in the first number of this Journal, for a luminous exposition of arguments which have, for many years, decided my own judgment, and appear to possess irresistible force; they will be found in the 3d, 4th, and 6th pages of his communication. The safest plan of treatment consists in combating the symptoms, as they arise in the progressive development of febrile commotion; but this cautious and *rational* practice cannot be expected from young and inexperienced men, who, prejudiced by favourite theories, issue from hospitals, prepared to expend upon fever the powerful measures appropriate for the phlegmasiæ. The abuse of strong purgatives has, of late years, been notoriously mischievous; but trifling, indeed, when compared to the deplorable effects(at least in *private practice*,) resulting from injudicious venesection in the management of typhus.

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* I am not an advocate for bleeding, in any disease, with the express object of causing syncope, as it is not free from the danger of inducing convulsions, where the constitutional powers are weak. I have observed that when deliquium follows upon a *moderate* evacuation by the lancet, the effect is seldom equal to that obtained by the abstraction of a *large* quantity of blood. I lately attended two gentlemen (one aged 40, the other 21,) in acute hepatitis and pneumonia: in both syncope was produced by the loss of 8 and 10 ounces, and the visceral inflammation was not very powerfully controlled. In acute rheumatism this occurrence is sometimes followed by metastasis.

> " —— Apoplexy *crammed intemperance* knocks
> " Down to the ground at once, as butcher felleth ox.
> " *Castle of Indolence*, canto I."

In these deplorable cases of sudden death, after long continued excitement of the cerebral vessels (if any inference may be deduced from the dissection of two individuals who were thus destroyed),the extravasation of blood in the brain is unusually large, the membranes of this organ are thickened by lymphatic exudation, and its vascular apparatus exhibits unequivocal proofs of previous disease.

Clinical Cases. By James Lomax Bardsley, M. D. Physician to the Manchester Infirmary and Dispensary, Lunatic Hospital and Asylum, and to the House of Recovery, &c. In a Letter to one of the Editors.—Continued from vol. i. p. 249.

Case III.—*Paruria Mellita.*

Samuel Sumner, aged 38, a weaver, was admitted into the Manchester Infirmary, on the 10th of April 1824. He complained of a frequent desire to void his urine, which was of a pale straw colour, had a sweet taste, and a smell like that of new hay. He was under the necessity of rising almost every half hour, during the night, to empty his bladder. His thirst was very urgent, and his appetite so voracious that he would sometimes eat until his stomach was obliged to disgorge its contents. He suffered much from severe pain and weakness in the loins. His skin was dry and shrivelled; and he informed me that violent exercise now failed to produce perspiration, though, about four months ago, his linen was frequently damp when at work and in bed. His gums were spongy and ulcerated. Pulse 96, and of a good strength. Tongue rather white. Bowels mostly constipated. There is no phimosis. His habits have, at all times, been regular and temperate. His weight is 139 pounds. About the beginning of November 1823, he first noticed the violent thirst and increased urinary discharge, which he supposes to have been induced by a frequent exposure to wet and cold, when in a state of profuse perspiration. He also suffered much, at that time, from mental distress, occasioned by the sudden loss of his wife. He had measured the quantity of his urine, during the last fortnight, and found that it amounted to 19 pints in the 24 hours. Judging, from the symptoms, that Sumner's disease was diabetes, I felt very anxious to make a fair trial of the remedial efficacy of a strict adherence to animal diet; and, on mentioning my wish to the patient, he expressed himself as willing to adopt any plan of treatment I considered most likely to remove his distressing malady. He was accordingly ordered to abstain from bread, and every kind of vegetable matter, and to live solely on broth and animal food; and he was directed to use, for common beverage, the *potus acidi nitrici* of the pharmacopœia of the hospital, in the proportion of two drachms of diluted nitric acid to three pints of water. Fourteen leeches were applied to the region of the kidneys, and his bowels were copiously evacuated by the aid of castor oil.

13th.–The pain of loins has been greatly relieved by the leeches, and the animal food is much relished, and does not occasion any derangement in the functions of the stomach. Thirst diminished. He has passed, within the last 24 hours, only 11 pints of urine, and taken of his nitric acid, diluted with water, 10 pints. The urine is whey-coloured, and very sweet. Its specific gravity is 1.041; and one wine-pint yields, on evaporation, 1 ounce 5 drachms and 5 grains of an extract, of the consistence and colour of treacle. It possesses no urinous odour. The acid is particularly grateful to him, as it abates his thirst, and relieves his burning heat. His sleep is less disturbed by frequent calls, during the night, to void his urine. Ordered to continue his animal diet.

16th.—He thinks himself much better. In the last 24 hours the quantity of urine has amounted only to 9 pints, and the drink to 10. The urine continues sweet to the taste. The gums are not quite so spongy. His appetite is less voracious. Skin remains dry. Pulse 94. Bowels kept open by occasional doses of the common aperient mixture of the hospital.

20th.—Finds his strength recruiting. Complains mostly of weakness in his knees. He has only made 8 pints of urine during the last 24 hours. Thirst less urgent, and appetite more natural. Animal diet to be continued. One pint of porter to be allowed daily.

20th–26th April.

		Urine.	*Drink.*
May 22.	-	9 pints.	10 pints.
23.	-	8½	9
24.	-	8	10
25.	-	7½	8
26.	-	6	8

The urine is 2 pints less in quantity during the last 24 hours than it was on the 20th. Specific gravity 1.032. Residuum, obtained by the evaporation of 1 pint of urine, weighs 1 oz. 2 dr. 12 grs. The patient seems much improved in general health and strength. His weight is now 142 pounds, so that he has gained 3 pounds since his admission into the Infirmary. His diet agrees very well with his stomach. It consists chiefly of fat mutton, beef-steaks, and eggs. He fancies himself almost capable of resuming his usual employment, and he is desirous of quitting the hospital as soon as I may think proper, having left his young family in the charge of a female relative, whose means of support are quite inadequate to the supply of their numerous wants. Tongue much cleaner. Bowels regular, without medicine. Pulse 90. Some moisture on the skin. To continue the same plan.

3d May.—The quantity of urine (as will appear from the register) has varied from 7½ to 5½ pints. Its taste, the patient informs me, is much less saccharine, and its colour is considerably deeper.

26th April—3d May.

	Urine.	*Drink.*
April 27.	7½ pints.	8 pints.
29.	7	8½
30.	5½	7
May 2.	6	7½
3.	5½	7

He gains daily strength and flesh, and does not experience any pain or debility in the lumbar region. He enjoys his porter very much. He adheres most strictly to his animal diet.

10th.—He has passed about 6 pints of urine in the 24 hours since last report. 1 pint, on evaporation, left 9 drachms and 2 scruples of an extract, with a strong saline impregnation and urinous smell. The urine is scarcely sweet. He perspires during the night, and, after retiring to rest, is not obliged to rise more than twice to make water. Appetite nearly natural. Ulceration and sponginess of gums quite gone. Bowels regular. Pulse 90, and of moderate strength. Countenance and spirits much improved. He entertains sanguine hopes of a favourable termination of his disease. Ordered to persevere with animal diet.

18th.—During this interval, the urine and drink have nearly balanced each other, and both amount to rather more than 5 pints in the 24 hours. The smell and taste of the urine are now almost natural. Its specific gravity is 1.023. He never feels thirsty except at meals. He now weighs 145 pounds. He complains of a slight tickling cough during the night, but is free from pain in the chest. He is permitted to walk in the garden, and finds himself able to continue the exercise, for a considerable time, without experiencing any sensation of lassitude or debility. He feels confident that he can resume his work. Ordered to continue the diet, and to use the linctus scillæ of the hospital for the cough.

26th.—The register will be found to point out only a very inconsiderable variation since last report.

20th—26th May.

	Urine.	*Drink.*
May 20.	5½ pints.	6 pints.
22.	4½	5
24.	6	6½
25.	5½	6
26.	5	5½

The skin has become softer, and he now perspires rather freely. Cough quite gone. In consequence of the earnest wish expressed by the patient to leave the hospital, and from the belief that he might be able to support his family by his own labour, I ordered him to be made an out-patient *, at the same time requesting him to keep a daily register both of his drink and urine, and to adhere, with the same strictness, to the sole use of animal food. I saw nothing more of him until the 16th of June, when he gave me the following report:

28th May—15th June.

	Urine.	*Drink.*
May 28.	5 pints.	6 pints.
30.	6	6½
June 4.	6½	6½
8.	5½	6
12.	5	6¾
15.	5½	5

He brought me some urine which he had passed in the early part of the morning. Its specific gravity was ascertained to be 1.024. He declared that he had abstained altogether from vegetable food. He follows his work with perfect ease to himself. His thirst and appetite remain moderate, and his mind is quite cheerful. His bowels require the occasional aid of purgatives. Some compound colocynth pills were ordered for him, and the injunction to persevere with the animal regimen was repeated.

10th July.—Since last report, a considerable augmentation has taken place in the quantity of the urine. The patient's register points out as much as 10½ pints of urine in 24 hours, and 11 pints of drink, but the average quantity of both may be estimated at 9½ pints. On inquiry, I found that he had been reluctantly compelled, in consequence of the high price of meat, and the low rate of weavers' wages, to relinquish his animal diet, and to satisfy his hunger with bread, cheese, potatoes, &c. To this cause he attributes the increase of the diabetic symptoms. His skin has become dry; appetite keen; and thirst urgent. Tongue white.

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* Out patients are such as attend at the Infirmary two days in the week, to receive their medicines.

Feeling himself so much worse from the use of vegetable food, and being too poor to purchase butchers' meat, he begged, very earnestly, to be re-admitted as an in-patient.

On the 12th, the quantity of urine and drink in the 24 hours was found to be rather more than 10 pints. I mentioned to the patient my intention of trying the efficacy of venesection in removing his obstinate complaint, at the same time allowing him the ordinary diet of the house. To this proposal he cheerfully assented. He weighs 140 pounds, having lost 5 pounds since his discharge. Pulse 86, rather firm. Bowels regular.

13th.—Twenty-four ounces of blood were removed from the arm, in a full stream. He was not in the least faint. Pulse before bleeding 82; after the operation 74. He was desired to resist, as much as possible, the cravings of his appetite, and to repress his thirst, with the view of preventing a too great supply of new chyle.

6th August.—The following table will shew the result of the treatment adopted since last report.

Date.	*Urine* in *24 hours.*	*Drink.*	*Spec. Grav. of Urine.*	*Quantity of Blood drawn.*	*Effect.*	*Weight* 140 *lb.*
July 15.	10 pts.	11 pts.	1.034	℥xvi	Pulse less frequent.	
—— 17.	11	11½	1.035	℥xvj	Similar.	
—— 19.	11	11½		℥xiv	Little change.	139 lb
—— 22.	12	12½	1.037	℥xij	Rather faint.	139
—— 24.	12	13		℥xij	More perceptible.	137
—— 28.	13	13½	1.038	℥xij		
—— 30.	14	14½	1.039	℥xiv		
Aug. 2.	13½	14		℥xij	Weakness.	137
—— 4.	14	14½		℥xiv		
—— 6.	13½	14	1.040	℥xiv	Great debility.	134

The quantity of solid extract obtained from the evaporation of a pint of urine amounts to 1 oz. 2 dr. 4 scr. 6 grs. It resembles treacle in its sensible qualities. His urine is of a pale colour; and he informs me, that his linen is occasionally stained by it. His gums are become sore, and his teeth are rather loose. Pulse slow and feeble. The serum of the blood, until the third or fourth repetition of the operation, was rather milky, when it began to assume a greenish appearance. The crassamentum was soft and dark coloured. Skin harsh and arid. Countenance anxious; mind much dejected. The state of the tongue is worthy of particular notice. During the last fortnight it has been covered with a dense, dark-coloured, crust, which the patient is unable to remove: it is particularly disagreeable to him. Owing to the decline of the patient's strength, and the increase of the diabetic symptoms, I was resolved to push venesection no further, but to have recourse to the daily exhibition of opium. The common aperient mixture of the hospital was used, in order to prevent constipation.

8th August.—The patient was accordingly ordered to take a pill, containing one grain of opium, three times in the day, and to continue a moderate use of the ordinary diet of the house.

12th.—Makes no complaint of stupor or headach from opium. Urine and drink nearly the same as on the 6th.

17th.—Considers himself rather better since he commenced with the opiate pills. Thirst less severe. Appetite very keen, but he uses his utmost endeavours to restrain it. Urine, in the 24 hours, amounts to 12¼ pints; drink to 13¼ pints. The specific gravity of the former is 1.039. Its sweetness and colour remain unchanged. Let half a grain of opium be added to each pill.

24th.—The symptoms have been nearly stationary in this interval. Pills to be continued.

2d September.—The register points out little or no variation in the amount of the urine and drink every 24 hours. He still complains of considerable debility. Foulness of tongue continues. Pulse feeble; skin parched; visage dejected; spirits very low. Let the dose of opium be increased to 2 grains, thrice a day.

8th.—His head has been rather painful during the last three days, and he often feels drowsy. His bowels require the daily use of opening medicine. The diabetic symptoms continue nearly stationary. The specific gravity of the urine is now 1.038. The colour, smell, and taste, of that secretion are not in the least altered. He still relishes the nitric acid beverage. He weighs 135 lb. Pills to be continued.

17th.—Urine in the 24 hours 13 pints; drink 14 pints. Other symptoms the same. The patient begs to be allowed to discontinue the opiate pills, as he fails to derive any benefit from their use. He wishes to resume the animal regimen. At my request he agreed to persevere with opium for a short time longer.

26th.—There has been but little fluctuation in the quantity of urine discharged, and drink used, in the 24 hours, within this period. The present specific gravity of the urine is 1.038.

The patient now weighs 135½ lb. Finding that Sumner had remained in the house a longer time than the rules of the charity allow, I requested Mr Worthington to let him be brought before the consultation of the Faculty of the Hospital, which meets on the first Thursday of every month :—Present, Dr Holme, Dr Mitchell, Dr Lyon, Dr Carbutt; Messrs Hamilton and Robert Thorpe. I mentioned to these gentlemen the results of the different modes of practice which had been adopted, as well as my wish, and that of the patient, to give the animal regimen another trial. They obligingly allowed him to remain in the house for this purpose.

13th October.—Since the alteration of the patient's diet, an evident improvement has taken place. His thirst is much abated, and his tongue is become cleaner. The change in the state of the skin in so short a time is quite surprising, for it now feels soft and somewhat moist. The urine is less sweet, and of a deeper colour. The average quantity, during the last nine days, may be estimated at 9½ pints each 24 hours; drink 10½ pints. Specific gravity of urine 1.033. Weight of patient 137 lb. The patient's person, countenance, and return of spirits, bespeak an important amendment in his disorder. He does not sleep so well since the opiate pills have been discontinued. Animal diet to be used with the same strictness as before; and a pill, containing 2 grains of opium, to be taken each night at bed-time.

26th.—The patient is greatly improved in general health and strength. The register points out a considerable diminution in the amount of urine and drink in the 24 hours, during this interval; as the following extract from it will shew :

15th–26th October.

	Urine.	*Drink.*
October 15.	9½ pints.	10 pints.
17.	8	9
19.	9	9
21.	7	7½
23.	6½	7
26.	5½	6

Specific gravity of urine 1.022. Weight of patient 139 lb. His appetite is moderate, and his thirst not great, except at meals. His skin is soft and moist. He can now sleep without being obliged to make water more than twice in the night.

14th November.—The average quantity of urine does not exceed 5½ pints in the 24 hours. It has lost most of its sweetness, and its colour is natural. Its specific gravity is 1.021. The patient was weighed on the 10th, and he has gained nearly 2 lb. since last report. He now fancies himself quite cured, and is very anxious to return to his family and usual occupations. He seems fully sensible of the necessity of adhering as strictly to the animal regimen as circumstances will permit. He left the hospital on the 16th. He attended at the Infirmary occasionally for several months after his discharge; and I was glad to find that he continued to enjoy an improved state of health. He called upon me about a month ago, and informed me that he remained better; and expressed his belief, that his recovery would be perfect, if the price of his daily labour supplied him with the means of abstaining altogether from the use of vegetable food. He is obliged to work very hard, in order to support himself and family.

Remarks.—The above case seems to possess some interest, for its history may be considered tolerably complete, and the greatest reliance may be placed on the facts stated in the reports of the register, as the patient's conduct was at all times such as to merit my entire approbation, and *in no one instance* had I the least cause to suspect that he had deviated from the plan of treatment prescribed for him. He was constantly under the vigilant care of our intelligent house apothecary, Mr Worthington, whose attention to the case I feel it proper to acknowledge. There can be no doubt concerning the nature of the disease under which Sumner laboured, as the symptoms of Paruria mellita were particularly well marked. The appetite was voracious, thirst urgent, skin dry and unperspirable, gums spongy and ulcerated, urine saccharine and pale coloured, and its quantity much augmented, amounting to 19 pints in the 24 hours. The disorder seems to have been produced by frequent exposure to wet and cold, when the body was much heated. I found, on careful inquiry, that neither Sumner's parents, nor any of his relations, had ever been afflicted with this affection. I mention this circumstance, because some authors are of opinion that diabetes may be hereditary. "That a predisposition or tendency to this affection," (says Dr Prout,) "exists in some families, I cannot doubt, as I have now witnessed four distinct instances of this circumstance [*]." The cases he has adduced tend to shew that diabetes is occasionally inherited; but further experience, and a more extended inquiry on this point, are necessary, before diabetes can be correctly classed, like scrofula, phthisis, and mania, under the head of hereditary diseases. We know but little respecting the proximate cause of diabetes, and the great difference of opinion entertained on this point, proves that it is still involved in a considerable degree of obscurity. *Post mortem* examinations of diabetic patients fail to throw any light on the real nature of this complicated malady. The kidneys are more frequently affected than any of the other viscera. Their size is occasionally much augmented *, their texture in some instances is firmer, in others more flaccid than natural †, their vessels are also preternaturally enlarged ‡, and their surrounding cellular membrane has been found filled with a gelatinous substance §. The ureters and bladder are sometimes considerably dilated ||. In one instance, Dr Duncan *junior* found the bladder capable of containing 5 lb. of urine, and he states, that about that quantity remained in it after death. "It had its natural form, and its parietes were rather thinner than usual, although the muscular fasciculi were very well marked. Its inner coat presented a perfectly healthy appearance, and the ureters entered below, in the usual manner ¶." Both the ureters were about one-fourth of an inch in diameter, and the sympathetic and splanchnic nerves were also enlarged to nearly three or four times their usual siz. A morbid state of the lungs and stomach has also been noticed in this disease. We not unfrequently meet with similar morbid phenomena in diseases, very different both in their nature and symptoms, from diabetes. Hence it cannot be matter of surprise, that such an infinity of hypotheses should have been advanced concerning the nature of this malady. When our knowledge of the pathology of any disease is defective, our treatment must necessarily be in a great measure empirical. It is to pathology that medicine is indebted for most of the important improvements it has of late years received. "L'anatomie pathologique," the celebrated Laennec justly observes, "est incontestablement le flambeau le plus sur qui puisse guider le medecin, soit pour reconnaître les maladies, soit pour guérir celles qui en sont susceptibles **." In some dissections of diabetic patients, no trace

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[*] See his very valuable "Inquiry into the Nature and Treatment of Diabetes, Calculus, and other affections of the urinary organs," p. 69.

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* *Vide* Edinburgh Medical and Surgical Journal, vol. i. p. 314. Edinburgh Clinical Reports, by Dr Duncan *junior*, p. 137.

† Home's Clinical Experiments, p. 334.

‡ In the case of Robinson, related by the late Dr Rutherford, the emulgent vein of the right side was not under three-fourths of an inch in diameter. Edin. Med. and Surg. Journ. p. 314. *Vide* Cruikshank on the Lacteals and Lymphatics.

§ Gregory's Elements of Physic, p. 613.

|| See the case of Oliver Omrad, related by Dr Clarke, in which the ureters were very much dilated, and through their whole course measured full half an inch in diameter.—Edin. Med. and Surg. Journ., vol. vi. p. 269.

¶ Dr Duncan *junior's* Clinical Reports, p. 137.

** *Vide* p. 21. of the Preface to his valuable Treatise on Mediate Auscultation.

of morbid structure has been discoverable. An intelligent practitioner informed me a short time ago, that he had recently examined the body of a young man, 21 years of age, who had died of this disease, without being able to detect the least deviation from healthy structure in any of the cavities.

Some diabetic patients seem to sink from the debility occasioned by the constant secretion of an unnatural quantity of urine, without manifesting any symptoms of organic disease. The appetite, though voracious, is inadequate to the supply of nourishment sufficient to balance the uncommon waste which is daily taking place. Pulmonary affections not unfrequently accompany diabetes. My uncle (Dr Bardsley) observes, "that he scarcely recollects an instance of this disease, where a slight affection of the chest did not more or less prevail *." In several instances on record, a connection between phthisis pulmonalis and diabetes is strikingly marked †. The phthisical symptoms existing previously to the attack of the latter disorder are often suspended by its influence; but, on the partial removal of the diabetic complaint, the tubercles pass rapidly through their several stages, and the patient's sufferings are terminated by death. This suspension of the diseased action of the lungs is often noticed in females who become pregnant whilst labouring under the symptoms of confirmed phthisis. The cough, expectoration, and hectic fever, almost entirely disappear; pregnancy advances, and labour ensues; when, in the course of a few weeks (sometimes days) the pulmonary symptoms return with aggravated severity, the strength rapidly declines, and life is soon extinct.

In the treatment of the case of Sumner above detailed, the superior efficacy of the animal regimen, to either venesection or opium, in relieving the diabetic symptoms, cannot, I think, for a moment be questioned. At the period of the patient's first discharge from the Hospital, the quantity of the urine was diminished from nineteen to five pints in the 24 hours, and that secretion had become almost natural. Its specific gravity was lessened from 1.041 to 1.023, which may be regarded as one of the surest signs of an important amendment in the disorder having taken place. The morbid condition of the skin was changed for a healthy one; the unnatural appetite and thirst were in a great measure subdued; the patient's general health and strength were restored, and he gained six pounds in weight. Poverty led to a relapse of his disorder, for his labour would

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* Medical Reports, p. 144.

† Vide Case of O'Brien, related by Dr Bardsley; and Case xxix. in Duncan's Clinical Reports.

not suffice to procure for him even a moderate supply of animal food, so that he was under the necessity of using vegetable diet. On his readmission, venesection was adopted, and 160 ounces of blood were removed from the arm; but this practice was attended with a diminution of the patient's strength, and an increase of the diabetic symptoms. He lost six pounds in weight. Opium was then tried, and certainly (as appears from the reports) with more benefit than venesection; but it failed to produce any decisive impression on the disease. Under these circumstances, animal diet was again employed, and with the same favourable result as attended its use in the first instance. The practice was so simple as to enable us to draw a positive inference as to the efficiency of animal diet in removing the diabetic symptoms. I by no means wish to recommend animal diet as the only means of checking the progress of this formidable disease, but merely to shew, that, in the present case, the patient derived very considerable benefit from this plan of treatment. No individual remedy is applicable to every case; for, in some instances, an entire abstinence from vegetable food proves highly useful; whilst, in others, venesection, opium, and diaphoretics (including the vapour and sulphur baths), seem to be more efficacious in relieving many of the symptoms of this affection. In the early stage of diabetes, venesection will often be found beneficial.

My highly esteemed friend, the late Dr Robert Watt of Glasgow, to whom the profession is much indebted for his able treatise on this disease, carried venesection to a great extent, and in some instances with marked success. Dr Satterly * and others have pursued the same mode of practice, and given their testimony in favour of the great advantages which have resulted from it. I am now making trial of venesection in a diabetic case under my care, but I shall reserve the particulars of it for another communication.

In the hands of Dr Warren †, Dr Elliotson, and Dr Prout, opium has been found useful in this affection. The latter writer, speaking of the beneficial effects to be really expected from opium, remarks, " that they may, in most instances, be obtained by moderate doses only; and when thus judiciously exhibited, and when no peculiarity of constitution forbids its use, I believe that it will be found to constitute one of the most powerful remedies that we possess in this disease." ‡ Diapho-

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* Medical Transactions, vol. v. art. I.

† Same work.

‡ See his Treatise on Prussic Acid, p. 89.

retics are very strongly recommended. With the view of producing a more direct action on the skin, Dr Marsh* was induced to employ the vapour-bath, and, by keeping up the perspiration, by means of warm clothing, and muscular exertion, his patient rapidly recovered. I think the sulphur bath is also worthy of trial in diabetic affections.†

It may be observed, that, in the employment of animal food as a remedy in diabetes, there is often considerable difficulty in keeping the patients for any length of time to this regimen; but, in many instances, its use has been attended with little or no inconvenience, and even been continued by the patients *from choice*, when a certain allowance of vegetable food has been permitted by the physician. Dr Marsh seems to me to overrate the loathing of animal food on the part of diabetic patients, when he asserts, that the adoption of the animal regimen, during even fourteen days, is, in his opinion, more than questionable. In some of the cases published by my worthy relative, the exclusive use of animal food was continued for more than two months.‡ I occasionally visit a lady, who has laboured under diabetic symptoms for more than nine years, and during the greater part of that time she has adhered, with scrupulous exactness, to the use of animal food. When I last saw her (about a month ago), she informed me that she enjoyed a very comfortable state of health, and that the only inconvenience she now experienced from her diabetic complaint, was a desire to make water rather frequently. The average quantity of urine secreted in twenty-four hours amounts to nearly five pints. Her appetite is always keen. Within the last six months she has become rather corpulent. She occasionally experiences slight pains in the head and chest, but they are soon removed by the application of a few leeches. The sluggish state of her bowels requires the daily use of aperient medicine. Her spirits are good, and she is capable of ordinary exertion, without being fatigued. Previous to the commencement of the animal regimen, it is of great importance to have the stomach and bowels well cleared. The first effects of this plan of treatment should be carefully watched, as there is some risk of the sudden occurrence of acute inflammation of the thoracic or abdominal viscera, when commenced shortly after an entire abstinence from animal food. I have more than once been obliged to modify the treatment on this account. This liability to inflammation under the animal regimen, is strikingly exemplified in the following case:—James Ridens, aged 26, was admitted into the Hospital on the 2d of August 1824. He complained of extreme thirst, increased appetite, dry skin, great debility, and a preternatural flow of sweet-tasted urine. The quantity passed in the 24 hours amounted to nearly to 2 gallons. One pint yielded, on evaporation, 1 oz. 4 drs. and 8 grs. of a thick sweet syrup. He had lost all venereal appetite, *and his semen was involuntarily discharged.* There was no phimosis. He weighed 10 stone and a few pounds. His diabetic symptoms had existed nearly four months; and he attributed his complaint to drinking copiously of cold water, when in a state of perspiration. His mode of life had occasionally been very irregular. The animal regimen was prescribed, and the nitric acid mixture (as noticed in the case of Sumner) was ordered for common beverage. His bowels were opened by the aid of castor oil. On the 5th, the urine was diminished more than 4 pints, and the patient informed me, that it was somewhat less sweet to the taste. He had no aversion to animal food. Early on the 8th he was suddenly seized with a severe pain in the epigastric region, which was much aggravated under the pressure of the hand. The stomach rejected every substance received into it. The pulse was small and frequent, and the countenance indicated great uneasiness. Twenty leeches were instantly applied to the epigastrium, 16 ounces of blood were removed from the arm, and a purgative enema was injected. In the evening the patient seemed somewhat relieved by the bleeding, but the pain of epigastrium was still present. A copious evacuation followed the enema. The serum of the blood drawn was milky, and the crassamentum firm. Pulse 120, and weak. A vein was again opened, and 18 ounces of blood abstracted; 12 leeches were applied to the epigastrium, and a pill with 3 grains of calomel and 2 of extract of hyoscyamus, was directed to be taken every third hour. The pulse, after the bleeding, was 106. On the morning of the 9th I found Ridens much worse, and evidently sinking very rapidly. He could with difficulty reply to the questions put to him. The pain of epigastrium was diminished, but the pulse was tremulous and intermitting, and his extremities were cold. His bowels had been moved twice during the night. Anodyne fomentations were applied to the epigastrium, weak wine and water was administered, and bottles of hot water were applied to the feet. He expired in the course of the afternoon. The friends, though urged by frequent solicitations, obstinately refused to allow an inspection of the body *. From the above reports, however, it is highly probable that Ridens died of inflammation of the stomach, induced by an unlimited use of animal food. At first, I imagined that the sudden attack which proved fatal might have been owing to over repletion; but I found that he had retired to rest as well as usual, and even complained of severe pain of epigastrium before breakfast, which was generally with him a very hearty meal.

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* See an excellent paper on Diabetes mellitus, published by Dr M. in vol. 3d of the Dublin Hospital Reports, p. 430.

† I venture to suggest the use of the sulphur-bath in diabetes, from the ample opportunities I have lately had of observing its powerful stimulating action on the vessels of the skin. Within the last eighteen months, sulphur-baths have been attached to our Hospital, and their efficacy in various affections has been satisfactorily established. Our highly respected and eminent senior surgeon, Mr Simmons, has employed them very extensively and usefully, not merely in diseases of the skin, but in scrofulous affections of the joints, in obstinate ulcers of the lower extremities, and in indolent tumors. I hope, through the kindness of that gentleman, to be able, at some future period, to give a report of those cases in which the sulphur vapour has been found beneficial.

‡ See work above quoted.

The nitric acid, under each of the modes of treatment adopted in the above case, was found to be both useful and highly grateful to the patient. It is a remedy which, in most diabetic cases, may be employed with advantage. When its effects on the bowels forbid its use, lime-water, or soda-water, may be substituted. As to the perfect cure of diabetes, we are obliged to speak with great caution, for this disease, like many others, baffles the skill and experience of the most distinguished practitioners. " Within these last six or seven years," says Dr Prout, " nearly 20 cases of diabetes have fallen, more or less, under my observation, and among these I have never but in *one* instance, and in that *for a very short time only*, seen the urine of a diabetic patient rendered quite natural †."

Case of Empyema. By William Donaldson, Surgeon, R. N.

Gentlemen, *Stonehaven, April 30. 1826.*

If you think the following case of empyema worth a place in your well conducted Miscellany, I shall feel obliged by its insertion. I think it is remarkable, for the very large quantity of pus which, in the course of a few days, was discharged from the thorax, amounting to no less, in three days, than 270 fluid ounces, or nearly 23 pounds.

Wm. Donaldson, *Surgeon*, R. N.

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* It is much to be regretted, that the prejudices and superstitious feelings of the lower orders, particularly in the populous and rapidly increasing districts with which I am connected, are so strong, as to deny us the privilege of cultivating (to that extent, at least, which would be desirable) pathological anatomy.

† See work above quoted, p. 81.

I was called to see William Falconer, residing in the country, about five miles from this place, who was said to be labouring under a severe attack of asthma, and in danger of suffocation. I found my patient sitting up in an arm chair, supported by pillows, being quite unable to lie in bed. The difficulty of respiration was extreme; the face was pale; the features shrunk, with an expression of great anxiety on them; the forehead was bedewed with a clammy perspiration; the extremities cold, and the pulse, at the wrist, almost imperceptible. The previous history of the case was this, which I collected from the attendants, as he was only able to speak in broken sentences.—About six weeks ago he had an attack of acute pleuritis of the left side, and was once seen by a medical man, where he then was, (employed as a farm servant in Aberdeenshire), who bled him once, and never again returned to see him. The bleeding, though only to the extent of a pound, from a stout athletic man as he then was, had the effect of alleviating the pain of the side. But this was only temporary, for next day it was as bad as ever; and it, with the cough, fever, and other symptoms, had continued with little variation, till about ten days ago, when, as they described it, he was seized with some severe *ague fits;* that is to say, severe shivering, when the pain subsided; but the difficulty of respiration, and a sense of oppression in the left side of the chest, had gradually increased from that time, until they had become as before described. I had him undressed, in order that I might examine the state of the thorax. The first thing that struck the eye was a puffy swelling over each intercostal space, beginning between the third and fourth, and extending to between the sixth and seventh ribs on the left side; this swelling extended, in length, from the edge of the scapula till within three inches of the sternum, so that the rib itself appeared as situated at the bottom of a furrow. The size of the left side of the thorax was evidently larger than the right; and on being tried by percussion, it did not resound, in any point, like the healthy thorax. The action of the heart might also be perceived, by applying the hand to any point on the left side of the chest; and also for nearly three inches on the right side of the sternum. The cough was unattended by expectoration of any kind. I was convinced that the left side of the thorax was full of fluid, which, if not evacuated, would most likely terminate my patient's earthly career in a few hours. I therefore determined to perform the operation of paracentesis immediately, to which he agreed most willingly. I made an incision of an inch and a half at the lower edge of the puffy swelling, and close upon the upper edge of the seventh rib, about midway between the spine and sternum; on dividing the integuments and cellular membrane, the intercostal muscles appeared extremely pale, and almost bloodless, so that hardly a drop of blood oozed from the wound. I resolved to be very cautious in opening the pleura, for fear of adhesions, but having divided the intercostals, *I came to a substance which had certainly no appearance of membrane, but looked exactly like condensed cellular substance, into which I cautiously cut for about the depth of an eighth of an inch,* when suddenly pus issued from the thorax with great impetuosity, to the distance of a foot from the chest; the stream, at first, was only about the size of a quill, but soon became about the diameter of the little finger. Eight large soup platefuls were thus evacuated in a short time; but I was obliged to stop the discharge, on account of my patient becoming suddenly very faint. I introduced a firm tent into the opening, binding it down to the side with a strong slip of adhesive strap, to prevent its getting into the chest; over this a compress and bandage was placed, and had the patient carried to bed, with his head well raised; a little spirits and water was given him (the only cordial at hand); he soon recovered from his faintness, and I left him much relieved, and expressing great gratitude for the aid given him. I attended next day, and on withdrawing the tent, four more soup platefuls of pus were evacuated, and the tent replaced; he had profuse perspiration, but the cough abated, and he complained of nothing but debility. He had a drachm of bark, and some elixir of vitriol, twice a-day. On the removal of the tent, next day, a soup plateful and a half of pus escaped; making, in three days, thirteen and a half platefuls. The plate contained exactly 20 fluid ounces, and the whole evacuation was 22½ pounds. From this time the discharge gradually diminished, and every thing went on prosperously, for about a month, when a small collection of matter took place lower down, between the ninth and tenth rib, and within three inches of the spine. The integuments became inflamed. A small tumour formed, which, by aid of cataplasms, came rapidly forward, and broke spontaneously, discharging about two gills of pus. The upper opening closed up immediately; but this continued discharging for about six weeks longer, and then finally healed; the only consequence remaining being shortness of breath on over exertion, which prevented him from following farm work. He now travels the country as a pedlar, and is quite healthy.

This case shews the lamentable consequences of the neglect of proper depletion in the early stage of this acute disease. A few timely bloodlettings would, in all probability, have then prevented all this train of formidable and distressing symptoms. Let it be a warning to the young practitioner to act with vigour in the very commencement of this complaint; always keeping in mind, that one full bloodletting at that time is better than many smaller ones taken at a more advanced period.

Remarks on the Use of Colchicum autumnale in Chronick Rheumatism. By WILLIAM GORDON, Surgeon, Welton, Yorkshire, Member of the Royal College of Surgeons, Edinburgh, &c. &c.

IT is evident that, from among several causes, two may be selected, which principally contribute to bring into total, though unmerited disuse, many active and valuable medicinal substances, or at least greatly to diminish the confidence of practitioners, in the efficacy they possess of curing, or alleviating, those diseases for which they had been recommended.

The first of these causes is the unqualified encomiums inconsiderately lavished upon them by those individuals who have either discovered or first applied them, or who, under some novel form of preparation, have afterwards exhibited them, in the treatment of other maladies. Such extravagant praise, naturally creates in the minds of others the highest expectations of their powers, and produces the most inspiring hopes,—these hopes are eventually deceived, and thus numerous truly useful articles of the materia medica fall into disrepute.

The second cause, perhaps more cogent than the first, is their administration in derangements of the system, which have been *mistaken* for those particular morbid affections, for which they were originally introduced and successfully employed. There is, perhaps, no medicine from which more discordant results have been obtained, than from the *tinctura colchici*, or about which such a diversity of opinions have been advanced; and this circumstance, I am persuaded, arises not only from the causes which I have mentioned above, but likewise from the different doses and modes in which it is given. The various conditions of the plant itself, when it reaches the laboratory of the apothecary, constitute another source whence many opposite conclusions respecting its utility may originate. In its administration, too, it is often combined with other medicinal bodies, some of which, coinciding with it in action, of course assist its operation; some serve only to increase its bulk or to conceal its flavour, while others, again, counteract its action altogether, destroy its proper and beneficial effects, and render it perfectly inefficacious.

The colchicum autumnale is possessed both of purgative and diuretic properties, and in certain doses and under certain circumstances, either of these effects can be procured from the tincture; a preparation which of late years has been strongly recommended in gout and chronick rheumatism, in the latter of which complaints

I have seen it singularly advantageous. Chronick rheumatism is characterized by stiffness and pain of the larger joints, which become weak and somewhat swollen. The pain is *always increased* by motion or cold, but *invariably* relieved by the application of warmth; slight febrile symptoms are sometimes present, the patient complains a little of thirst, the surface of his tongue is white, and his appetite for food somewhat diminished. For the most part, however, no fever manifests itself, and the state of the digestive organs continues unimpaired. In cases presenting the above symptoms, I usually prescribe the tincture of colchicum, in doses of from one to two drachms, to be taken three or four times a-day; and this quantity seldom fails to produce copious evacuations from the intestines, after which the patient always experiences considerable, often astonishing, alleviation, and occasionally, indeed, nearly complete abatement of all his pain and uncomfortable sensations. The symptoms of chronick rheumatism are in some instances mitigated by a few of the more active and warmer purgatives, as soon as these have operated upon the bowels. Their effects, however, are but of short duration, nor are they rendered more permanent by the subsequent exhibition of *small doses of* the tinctura colchici; *from which it would appear, that the anodyne principle (veratria* as it is named) *contained in colchicum, cannot exert any lasting influence over the general system, until its own cathartic power has actively operated upon the alimentary canal.* The practice, which I have many times seen pursued, of administering the tinctura colchici in union with opium and other narcotics, I regard as exceedingly injudicious, inasmuch as the latter induce a torpid condition of the intestines, which greatly retard the recovery of the patient, for in no single instance in which the colchicum tincture did not freely evacuate these viscera, have I ever perceived the smallest diminution of pain to follow its employment. In disorders of the chylopoietick viscera, we may observe, especially in middle aged and elderly people, acute pains in the hip, knee and shoulder joints. The muscles, also, in the vicinity of these parts, are not unfrequently affected, and in almost every instance the pain is felt remarkably severe, about the insertion of the deltoid muscle. Upon examining our patient, we shall discover that the tongue is foul, the mouth dry, the taste vitiated, the thirst considerable, the appetite weakened, and the alvine discharges dark, slimy, or offensive; and, upon further inquiry, we shall find that the pain in the extremities is little, if at all, affected by cold, sometimes even moderated by gentle motion, but always *greatly aggravated* by *external* heat. In no example of this description have I observed the colchicum to be productive of the least benefit;

indeed in many instances its use appeared hurtful, being succeeded by an augmentation of pain, fever, and universal uneasiness. To cases of this kind, proper doses of the milder mercurial preparations, in conjunction with well regulated aperient medicines, light nourishing diet, and moderate exercise, are the most applicable, and, by a steady and attentive perseverance in this system of treatment, I have seldom been disappointed in curing the patients labouring under this species of disorder, who have come under my care. These few remarks, I am well aware will be entirely devoid of all novelty to the experienced and observant practitioner, but I hope they will not be altogether useless in directing the younger members of the profession how to employ, with most advantage, so excellent a remedy as the tincture of colchicum, in one of the most tedious and distressing diseases incident to humanity.

WELTON, YORKSHIRE,
24th April 1826

Cases of Hemorrhea, with Hereditary Tendency. By JAMES CRAIG, Esq. Surgeon, Ratho, Member of the Medico-Chirurgical Society of Edinburgh. In a Letter to one of the Editors.

SIR,

THE three following cases of hemorrhea, which lately came under my notice, may perhaps be deserving of a place in your Journal. Probably they may present nothing new, but at least will add to the number of those already published by Nasse, Meckel, Otto, Hay, Elscesser, and others. As cases alone I send them, without attempting to account for, or give any explanation of, the hemorrhagic diathesis, state of the constitution, or condition of the blood at the time.

I have the honour to be, &c.

RATHO,
May 18. 1826.

J. CRAIG.

C. L. a weaver, æt. 54, had for several years a fistule in the perineum, communicating with the rectum at its superior extremity, and for which, until lately, he took no medical advice.

Upon the 6th of July 1825, he underwent the operation in Edinburgh, and had gone to town on the 7th, 8th, 9th, and

10th, a distance of about seven miles, to have the wound dressed: he went in the track-boat, and walked from Port-Hopetoun to the surgeon's house, in the centre of the new town. I understand, that he lost very little blood at the operation, and no untoward symptom occurred until about 2 o'clock on the morning of the 11th. He awoke with a considerable degree of uneasiness in the hypogastrick region, and a pressing desire to go to stool, when he passed a large quantity of coagulated venous blood, but no feces. The blood continued to flow, and about 3 o'clock A. M. I *first* received an urgent message to visit him. He was then sick and faint, his countenance pale, and his pulse quick and very feeble. Upon examining the wound, I could perceive no vessel from which the blood was poured, but conjectured it to proceed from some of the hemorrhoidal veins. With some agarick, I firmly plugged the wound, and the bleeding ceased; desired him to be kept cool and quiet, to have ten drops of the aromatick sulphuric acid every two or three hours, to have his drink, &c. cool, and, if very faint, to have a little wine and water. I measured the blood he had voided, and it amounted to three pounds.

In about an hour after I had left him, he again had a desire to go to stool, when the plug came out, and the bleeding recommenced. My colleague, Dr Stewart, visited him along with me about 10 o'clock, and recommended some lint to be soaked in a strong solution of the *pulvis stypticus*, and introduced into the wound; when this was done, the bleeding again stopped. It threatened to return several times in the course of the forenoon, but was always suppressed by the above method. In all, I think he could not have lost less than four pounds of blood, and I feel satisfied that I speak within bounds when I say so. Afterwards, every thing went on favourably, and he recovered sooner than, after the loss of such a quantity of blood, I would have been led to suppose, especially when we take the age of the patient into account.

Why the bleeding did not occur sooner after the operation, especially when he daily underwent such unwarrantable exertion, and from whence it proceeded, I shall leave undetermined. That it was venous there can be no doubt. He never had been subject to piles, and the other organs in the pelvis seemed perfectly sound. At no former period of his life did he ever remember to have shown such a tendency to hemorrhea, although he has frequently received accidental cuts and slight wounds.

D—— L——, æt. 19, the son of C—— L——, whose case is related above, had the left front incisor of the upper jaw extracted for toothache, about 9 o'clock on the morning of the 13th July 1825. It came out very easily, and the alveolar process was uninjured. The bleeding from the socket never altogether ceased during the early part of the forenoon, but between 2 and 3 o'clock increased to a great extent. It continued to bleed very profusely during the night, filling his mouth so rapidly as not only to prevent him from sleeping, but almost from lying in the recumbent posture; he was in the morning very sick, and fainted several times. He had applied cold water, spirits and water, and spirits undiluted, without the least effect.

With some difficulty he was brought to me about 8 o'clock on the morning of the 14th July, but so pale that I hardly could recognize him; and, upon examination, the bleeding seemed to proceed principally from the bottom of the socket. The blood was arterial; it did not at that time flow in a stream, but by a rapid succession of large drops. In point of consistence, I could not distinguish in it any difference from healthy arterial blood.

By the application of lunar caustic to the whole socket, which was then filled up with a firm dossil of lint, the bleeding was commanded, and did not return.

Since that time he informs me, that he received a lacerated wound with a hoe, upon the second joint of his right fore-finger, and though to appearance very trivial, yet the bleeding was very profuse, and was only suppressed by a firm compress, bound tightly over the wound.

With the exception of these two instances, he never remembers to have had any profuse bleeding, and has always enjoyed good health.

7th January, 1826.—Adam M'K——, æt. 7 months and a half, had his gums over the two front incisors of the upper jaw scarified yesterday, between 12 and 1 o'clock, by a neighbouring practitioner. The wound continued to bleed profusely during the day, and about 10 o'clock at night, intelligence was sent to the surgeon who operated, but he declined attendance.

I first saw the patient about four o'clock P. M. on the 7th, having been at some distance on a professional visit; his countenance was then pale and ghastly, his eyes sunk and glassy, his bowels were moved during the day; his breathing hurried, and performed with labour, and his pulse quick, small, and extremely feeble. Upon examining the wound very carefully, which had been made longitudinally along the gum, about half an inch in length, the blood was seen to ooze from the whole of the divided surface, as from a sponge. The hemorrhagy had continued without intermission since yesterday, and, with the exception of a solution of alum, nothing else had been applied. The child had formerly enjoyed good health, and had been stout and lusty.

By a free application of lunar caustic, the hemorrhage stopped, and I directed the mother of the infant to apply a firmly folded dossil of lint soaked in a solution of the *pulvis stypticus* over the gum, which, from the weak and languid state of the little sufferer, was easily held constantly upon the part; and to keep him perfectly quiet. From the alarming exhaustion, I ordered a little wine and water to be given frequently.

Upon repeating my visit between 10 and 11 o'clock at night, I found that the eschar had separated, and that the moment the pressure was removed, the hemorrhage continued with as great violence as before. By repeated applications of the caustic and pressure, steadily and unremittingly applied, the bleeding was kept under, but did not finally cease until the afternoon of Tuesday the 10th, on which day he was ordered a dose of castor oil, upon which a quantity of feculent matter, mixed with blood, was voided; from that time he gradually recovered. One of the teeth appeared upon the 11th, and the other about a fortnight afterwards.

It is impossible to offer even a vague conjecture of the quantity of blood lost, independent of what was swallowed. Napkin after napkin had been applied: but to see a stout healthy infant reduced to such an alarming state of debility from loss of blood alone, as to render his recovery for some time doubtful, and apparently from such a trivial operation, is certainly not at all a usual occurrence, and one that would make a surgeon pause, before he attempted a similar operation on the same patient. No such hemorrhagick diathesis had ever been observed in any other member of the family, and the boy has since enjoyed good health.

II. PRACTICE OF SURGERY.

On Aneurism. By Robert Allan, Esq. F.R.S.E. Surgeon to the Royal Infirmary, and Lecturer on Surgery in Edinburgh. In a Letter to one of the Editors. (Continued from vol. i. p. 337.)

Case V.—*Femoral Aneurism.*

Margaret Robertson, aged 40, was received into the Royal Infirmary on the 31st October 1825. A large firm tumour occupied the inner and fore part of the right thigh, extending from an inch below Poupart's ligament, to within three inches of the knee-joint. It was situated in the course of the femoral artery, but had no perceptible pulsation. Its surface was inflamed, particularly at the lower part, where the integuments appeared thin, and formed a projecting point. The swelling was rather diffuse than circumscribed, its upper edge being the only part of it which was well defined. The pulsation of the femoral artery above the tumour, was very distinct; that of the posterior tibial artery was just perceptible, but no pulsation could be perceived in the anterior tibial artery. The leg and foot were not swelled, nor edematous, and she did not complain of any pain, but only of a numbness, and tingling sensation in the leg. General health good.

The patient said, that about twenty-five days previous to her coming into the Hospital, while going down a stair, she twisted her leg, and that eight days thereafter a small tumour, of the size of a pigeon's egg, appeared about the middle of the thigh. At this time she experienced much pain in the inside of the thigh, and perceived a violent pulsation in the swelling. The tumour rapidly increased in size, the numbness and tingling sensation becoming greater, and the pulsation less distinct, in proportion to the augmentation of its bulk. It may be proper to state, that, although there was no pulsation in the tumour at the time this patient was received into the hospital, having been seen by my colleague Dr Hunter and several other surgeons a few days previous to her admission, the tumour was then found by them to be of the size of an orange, to have a strong pulsation, and to be situated a little above the middle of the thigh, in the course of the femoral artery. I ordered a purging clyster to be immediately administered, cloths wet with cold water to be kept constantly applied to the tumour, and the patient to be confined to bed. I requested a consultation to be called next day at half-past eleven o'clock A. M.

1st November.—The consultation being of opinion that the tumour was an aneurism of the femoral artery, and requiring operation without delay, I immediately proceeded to tie the external iliac artery.

I commenced an incision as high as the anterior superior spinous process of the ilium, but an inch nearer to the linea alba, and continued it down in a semicircular form, crossing the course of the artery, and terminating immediately above the external abdominal ring. This incision was about three inches in length, and the external epigastric artery being divided, was secured by ligature. After I had exposed the tendon of the external oblique muscle, I made a small opening into it at the lower angle of the wound. Into this opening I inserted a director, and slit the tendon up the whole length of the external incision. With my finger I then brought into view the lower borders of the internal oblique and transversalis muscles, introducing it under them at the point where they depart from Poupart's ligament, and divided them upwards to the extent of half an inch. The peritoneum was now easily separated by the finger, from its connections, and pushed upwards, in which situation it was held by my colleague Dr Ballingall, when I felt the artery beating strongly at the bottom of the wound. Still using the finger, I separated the cellular substance, so as to expose the artery about an inch and a half above Poupart's ligament. By means of a few scratches with the scalpel, on the anterior part of the artery, I opened the sheath, and bending the thigh upwards, passed with the greatest ease, from within outwards, by means of the common aneurism needle, a ligature, consisting of three threads. When the ligature was tied, the pulsation of the femoral artery, immediately above the tumour, instantly ceased; the edges of the wound were brought together, and kept in contact by means of three stitches of the interrupted suture and adhesive plaster; a compress and T bandage were applied, and a flannel roller put round the whole limb. On the patient being put to bed, the foot of the affected limb was found to be considerably colder than the other, and therefore bottles of hot water were employed.

Seven o'clock in the evening.—The patient said that she had felt no pain since the operation, and expressed herself comfortable and easy. A considerable quantity of serum had oozed out from the wound; pulse 78, of natural strength; heat of the aneurismal limb 97°, of the sound one 98¼°. A draught was ordered, containing forty drops of laudanum and twenty-five of antimonial wine.

2d November, 7 A. M.—It was reported that she had slept a good deal during the night. She complained of some pain in the neighbourhood of the wound, but of no tenderness of the abdomen, and had no nausea or vomiting; discharge of serum much diminished; pulse 76, of natural strength; no dejection; little thirst; heat of both limbs 98°.

At the hour of visit (12 o'clock), she complained of constant dull pain in the wound, and occasionally in the abdomen; the serous discharge appeared to have ceased; pulse 116, of natural strength; and there was considerable heat of skin. She had some headache, and complained of much numbness in the affected limb. The size of the aneurismal tumour was a little diminished, and the redness of its surface had now disappeared; heat of both limbs at the toes 98°. A cathartick clyster was ordered to be administered immediately. Half an ounce of the common saline mixture, with ten drops of antimonial wine, to be taken every two hours, and the artificial heat to be discontinued. At seven in the evening she complained of much pain in the wound, but of none in the abdomen; pulse 108, of natural strength; skin warm and moist; one copious dejection had been procured from the enema; heat of aneurismal limb 94°, of sound 96°. The sudorific draught was ordered to be continued.

3d November.—She had slept well after taking the draught; the pain in the wound still continued, but no tenderness in the abdomen; pulse 116; skin of natural temperature, and moist; tongue clean; no dejection; heat of aneurismal limb 92°, of sound 93°. The size of the tumour was considerably reduced, and its form now quite circumscribed. The wound was dressed this day. The lips had not adhered; there was no inflammation, tumefaction, or pain on pressure; and the discharge was in small quantity. A cathartick clyster was ordered to be given immediately. In the evening the pulse was 110; the heat of the aneurismal limb 94°, of the sound 97°; the injection had procured one copious stool. The sudorific draught was ordered to be continued.

4th November.—Passed a tolerable night. Complained of pain in the wound, and was much annoyed with tickling cough. The tumour was beginning to become flaccid; pulse 100, and of natural strength; heat of aneurismal limb 91°, of sound 92°; the wound had the same appearance as on the preceding day. A mucilaginous mixture was ordered for the cough, and a colocynth pill every four hours till the bowels were freely opened. It was found in the evening that the belly had not been moved. A clyster was therefore ordered to be given immediately.

5th November.—This day she complained much of nausea; had frequent hiccup, and occasional vomiting. The abdomen was somewhat distended and tympanitick, but not painful on pressure; and she experienced scarcely any pain in the wound. Had three dejections; pulse 100, and small; tongue rather foul. The size of the aneurismal tumour was very much reduced. The saline diaphoretic mixture was desired to be omitted, and a powder, containing two scruples of calcined magnesia, ten grains of the powder of rhubarb, and five grains of ginger, in an ounce of peppermint water, to be taken every hour.

At eight o'clock in the evening, I observed slight aberration of mind, and understood that the nausea and vomiting had occasionally recurred, but were not so frequent as in the morning. The abdomen was still tympanitick, but rather less swelled, and there was no pain on pressure; her countenance was anxious, and her speech hurried; pulse 100, rather small; skin natural;

tongue foul, but moist; no dejection. A purgative enema was ordered to be given immediately, and to be repeated every hour till the bowels were fully cleared. A pill, containing three grains of the extract of hyoscyamus, was also directed to be taken; the powder of magnesia and rhubarb to be continued; in the event of the pulse continuing feeble, or sinking, a little wine to be occasionally administered.

6th November.—When visited at three A. M., it was found that she had not slept any, and that the aberration of mind had increased. She did not complain of any pain; pulse 125, and scarcely perceptible at the wrist; countenance extremely depressed; respiration hurried; three scanty dejections; an ounce of port-wine was given, and a little of it, with warm water and sugar, was desired to be often repeated. She gradually sunk till seven o'clock, when she died.

Dissection.—The body was examined fifty-two hours after death. On opening the abdomen, no inflammation or redness appeared in the peritoneum, or in the intestines; indeed they were whiter, and had fewer red vessels, than is generally found in a state of health. No disease existed in the mucous membrane of the intestinal canal; the liver was larger than usual, but did not seem to have undergone any morbid change: all the other abdominal viscera had a healthy appearance. There appeared to have been no action in the wound; its edges had no tendency to adhere; the peritoneum had not regained adhesion to those parts from which it was separated in the operation; there was no suppurating or granulating surface, nor was there any appearance of gangrene. The ligature was seen closely surrounding the artery, in which there was no ulceration, and had been placed three-fourths of an inch above the epigastric, half an inch above the circumflex iliac, and immediately above an artery nearly of the same size, and taking the same course.

The artery was filled, for two inches above the ligature, with a firm coagulum, the lower part of which adhered to the sides of the vessel, but it contained no clot below the ligature. In tracing the artery down the thigh, the profunda was observed coming off one inch and three-fourths under Poupart's ligament. About two inches below the origin of the profunda, the femoral artery began to dilate, and was seen to form a tumour at its inner side, of the size of a large apricot, and resting upon the belly of the adductor longus, to which it firmly adhered. This tumour was in close contact with a large aneurismal sack, formed by the bursting of the artery, and seemed to be connected with it, in the same manner as the auricle is connected with the heart. This sack, upon being opened, was found to contain about eight ounces of coagulated blood, and after this was cleared out, a communication of an oval form was perceived betwixt it and the smaller sack in the artery. The opening betwixt them was of such a size as would have permitted a large nutmeg to have passed. The artery was seen entering into, and passing out of, the smaller sack, with mouths, at the distance of an inch and one-fourth from each other. This smaller sack was also filled with coagula, and the clots, which were very firm, extended into the artery, to the distance of an inch above the tumour, leaving that portion of the vessel which was betwixt this point and the origin of the profunda, the space of an inch, empty, and of its natural size. The artery below the tumour was diminished in size, and contained coagulated blood; and this was the state of the vessel, both with regard to size, and to its containing coagulated blood, even in the popliteal artery. The larger aneurismal tumour seemed to be formed by the cellular substance and muscles; the sartorius was stretched over its anterior and lateral parts, and here this muscle was greatly increased in breadth, very thin, and adhered closely to the sack; the posterior part was formed chiefly by the vastus internus; and the inner part by the dilated artery, in conjunction with the sartorius. The belly of the vastus internus connected with the aneurismal sack, was much absorbed, and the rectus muscle was pushed over towards the outer side of the thigh; but its substance was entire, and it lay in contact with that part of the sack which was formed by the sartorius and the condensed cellular substance. The sheath of the femoral artery, for an inch above the tumour, and for some little space below it, was greatly thickened.

All the principal veins of the thigh were much changed in their appearance. The superficial femoral vein, from the point at which the saphena enters it, to the knee, felt hard, gave considerable resistance to the knife, and was as thick in its coats as the common iliac artery. Where this vein lay behind the tumour, its sides, although in contact, were not adhering; and, from the point at which the deep femoral vein entered it, to the ham, it contained solid coagula, which adhered to the vessel. The deep femoral vein was equally thickened in its coats as the superficial, though pervious; but the saphena major, although greatly thickened, was not so much diseased as either of the femoral veins.

Remarks.—One of the most remarkable features in this case was the rapid growth of the aneurism. The tumour of the artery appears to have burst early; and, after the blood escaped into the cellular substance, increased so rapidly in size, that, when the patient came under my care, twenty-five days from the date of the accident, and about seventeen from the time she first observed the aneurism, there was neither pulsation nor retrocession of the blood when pressed on, two of the most decided characteristics of aneurism.

The tumour approached so close to Poupart's ligament, that if I had attempted to tie the artery at the top of the thigh, there would have been a risk of opening the sack; and if the wound had inflamed, the inflammation might have extended to it, and terminated in suppuration or gangrene; but even if there had been sufficient room to tie the artery betwixt the tumour and Poupart's ligament, I do not think it would have been advisable. I conceive, that, in every case where the aneurism is situated high in the thigh, the preferable practice is to place the ligature on the external iliac. The artery at the top of the thigh is covered by a strong fascia, and a mass of glands, which are frequently enlarged, and their connecting cellular substance so thickened as to render the operation less simple; besides, there is no artery in the body more irregular in its origin than the profunda; sometimes it comes off two inches below Poupart's ligament, at other times one inch, and, on some occasions, as soon as the inguinal artery emerges from the abdomen, it divides into two branches. Independently of this irregularity in the origin of the profunda, the epigastric sometimes springs from the femoral artery instead of the external iliac. The attempt, therefore, to secure the femoral artery at the top of the thigh, might, in some cases, defeat the object of the operation, by giving rise to secondary hemorrhage, upon the separation of the ligature; whereas the external iliac artery is easily accessible to any one acquainted with the anatomy, and when the ligature is placed at some distance above the epigastric, it will be beyond every branch which can disturb the formation of a clot, and the closure of the artery.

The dissection of this case points out very forcibly the danger of cutting at the sides of the artery, or of using a sharp pointed or sharp edged needle in passing the ligature. If I had opened the sheath, by cutting at the sides of the artery, instead of doing so by scratching with the knife on its anterior part, I undoubtedly would have wounded the branch, which came off about half an inch above the circumflex iliac, and which was of the size of a crow quill. I need not say, that such an occurrence might have caused embarrassment in the operation, as well as led to misconception on the part of the spectators.

Margaret Robertson lived only six days after the operation; yet in this short space of time the size of the aneurismal tumour was reduced two-thirds. Now, as the heat and circulation in the limb were perfect, as the tumour was rapidly declining in size, and as there was little constitutional irritation, at least till the day preceding her decease, circumstances taken in conjunction with the fact of her not having lost above half an ounce of blood during the operation, which lasted twelve minutes, it may naturally be asked to what cause was her death to be imputed? The dissection gave no direct intimation on this head. I can only state, as a probable solution of the difficulty, that this unfortunate woman had led a very irregular life, as one of her female associates informed me she had been much addicted to drinking, and I perhaps, therefore, erred in depriving her of that stimulus to which she had been long accustomed. I am certainly inclined to believe, that it might have been advantageous to have allowed her a certain proportion of wine, or even spirits. On many occasions the surgeon, as well as the physician, will find it a good rule in practice to be in a great measure influenced by the former habits of his patient.

Curious variety of Intestinal Strangulation. In a Letter to the Editors from JOSEPH BROWN, M. D., Sunderland.

J. S., æt. 26, sent for Mr Ward, surgeon of this place, who found him suffering under symptoms resembling those of strangulated hernia, but without any tumour in the groin or elsewhere. He was freely bled, generally and locally; purgatives of various kinds, enemata, &c. were employed, but without effect, if we except one scanty alvine evacuation, very properly regarded by Mr Ward as proceeding from the lower part of the intestines only. I saw him once during his illness, at the request of the attending surgeon, but did not suggest any addition to the treatment which he had so properly adopted. The patient lived ten days from the invasion of the symptoms. I was present at the examination of the body, which was made by Messrs Ward and Watson. The vermiform appendix had contracted an adhesion to the mesentery, and thus formed a loop, or noose, by means of which, a portion of small intestine, about two yards in length, was completely strangulated. Of course, it is impossible to say whether the appendix had passed over the intestine, and, by its adhesion, had caused the strangulation, or whether the intestine had slipped through subsequently to the formation of the adhesion. The very firm pressure exerted by the appendix at the point of strangulation renders the former supposition, upon the whole, more probable. The incarcerated portion was livid through its whole course, and in many places could be torn with the same ease as wet paper. The intestines above and below this very extensive strangulated portion were perfectly healthy.

The question may be asked, why notice a case which admits of no practical application? But it seems advisable that every remarkable fact should be recorded somewhere. That which, in the actual state of our knowledge, appears insulated and barren, may, at a future time, be found to bear a useful relation to other facts, and lead to results which we do not at present foresee.

Case of Curvature of the Tibia, resembling Fracture, which occurred after an injury to the Bone, in a Child affected with Mesenterick disease. By ROBERT ARROWSMITH, Esq.

THE following general statement may not appear altogether unimportant to such of your readers as were interested in the case of partial spontaneous fracture of the femur, related in the last number of the Edinburgh Journal of Medical Science, by Mr B. Bell.

The subject of it was a child, who presented very decisive marks of mesenterick disease. She was about four years old, and had been very ill nursed. The growth was impeded. The face was pale, wrinkled, and aged in expression; the upper lip was swollen; the head large; the abdomen considerably tumid; the muscles in general soft, and those of the inferior extremities smaller in proportion than in the rest of the body. The appetite was capricious, and the character of the alvine excretions, for the most part, exceedingly unhealthy.

In the beginning of February 1821, she fell down on a brick pavement, and hurt her left leg, but she immediately got up, and walked into the house, a distance of about ten yards. I saw her in the course of the same day. She complained of the tibia, rather higher than the middle of the bone; but as the limb was perfectly straight, and as the symptoms of fracture were altogether absent, the injury was not regarded as important. Rest, and an evaporating lotion, were the means which seemed to be requisite. I saw her again two days afterwards; and as she could then walk without much pain, and made scarcely any complaint, I did not consider it necessary to call on her again. The limb was perfectly straight, and the external marks of injury inconsiderable. About a month afterwards, I was again desired to visit the child on account of the effects of the accident. She continued lame; and though she occasionally walked about, was becoming less and less inclined to do so. The tibia was now obviously not straight, and the centre of the existing curvature was in the seat of the previous injury. There was a very slight redness of the skin, and tenderness on pressure, but not the least crepitus or motion in the injured part of the tibia. The lotion was again applied, and absolute rest imposed. In the course of a month, it became under this treatment apparently well. It was straight, free from inflammation or tenderness, and, to the child's feelings, as strong as the other. She remained well for about two months, and then the curvature began to return: but, as confinement was manifestly prejudicial to the general health, it was deemed more advisable to apply an iron support to the limb, so as in some measure to relieve the tibia from the superincumbent weight, than to recur to the continued horizontal position. This support was found adequate to its purpose, and the tibia soon became straighter, but never afterwards perfectly straight; for when the improvement became considerable, the friends were induced to remove the support, out of regard to the feelings of the child. It was therefore alternately used and laid aside.

During the remainder of the child's life, her health was very variable, and the effect of the state of the health on the figure of the tibia was quite remarkable. When she was comparatively healthy, it would become and remain nearly straight; and, on the recurrence of the disorder of the bowels, and the debility, which were often considerable, the curvature would take place in a few days. She died in January 1824, from an attack of pulmonick inflammation of two days continuance, having been previously much exhausted by the mesenterick disease. Leave could not be obtained to examine the body. To the last, the straightness of the tibia was variable, and so evidently depended on the general health, that it might safely have been taken at any time as an index of it. The opposite limb remained straight.

Probably neither the case of Mr Bell, nor the less important ne, thus imperfectly stated by myself, presents any thing very novel or instructive to the profession; but, with respect to the latter, it may be remarked, that it appears to indicate that a slight injury to the bones in children suffering under mesenterick disease, may occasionally produce an alteration in the figure of the bone resembling fracture. And this appearance may be construed to the disadvantage of the character of the practitioner in attendance, if its possible occurrence have not been foreseen and announced.

May 8. 1826.

Case of Strangulated Hernia of five days standing; performed successfully. By M. Priou, National Associate at Nantes.

June 28. 1825.—On arriving at his house, in the village of St. Barthelemi, three miles from Nantes, I learned that, in the afternoon of the 23d June 1825, M. C. being at a considerable distance from home, and fearing that night might overtake him, had quickened his pace, become very warm, and suddenly felt a severe pain in the right groin. He observed at the same time that a tumour had been formed in the same place. He endeavoured in vain to disperse it, as he had formerly been accustomed to do. He could not sleep during the night, and was troubled with hiccup, and frequent vomitings. M. Renou *senior* saw him about the middle of the following day, and performed the taxis without effect, and bled him in the arm. Messrs Deshayes, Renou *junior*, and Guilman, were successively called in consultation. The hernia could not be reduced. Emollient cataplasms were applied to the tumour; hot baths for the whole body; diluted drinks, and calming potions, with laudanum, were given; emollient clysters, and injections of tobacco, which are regarded by Mr Lawrence of London as the most powerful means of alleviating strangulated hernia, and are recommended by M. Richerand: such were the means employed; but without any beneficial result for the patient. M. Desgages was consulted separately; he was of the same opinion as the other medical gentlemen; that is to say, he looked upon the operation for the hernia as the only means of saving the patient, in the circumstances of the case; but none of these gentlemen were willing to perform it. That which deterred them, was no doubt the assertion of the patient, that, for a considerable time past, the scrotum had been much larger on the side where the hernia was than on the other. Hence it was natural to fear, that the return of the ruptured parts might be opposed by some adhesions: and I must confess that I shared their fears in this respect.

After M. Renou *sen.* had informed me of the circumstances which I have just mentioned, I examined the patient with a scrupulous attention. He was about 30 years of age, and appeared to me of a bilious sanguine temperament. His pulse was full, hard and quick; his skin burning hot; his features animated; his tongue red and dry, and his thirst very great; his urine of a deep yellow; his dejections were seldom, and the wish to make them frequent. His abdomen was contracted and very painful on being pressed, especially towards the umbilicus, where the patient experienced a sort of painful tension. He had repeated colics; a frequent hiccup; and at times vomited matter of a greenish colour. The hernial tumour was oblong, soft, doughy, heavy, without any swelling, tension, or resistance; and was about the size of a goose egg. When it was handled, it did not produce any gurgling noise; and the patient did not actually feel any pain except when the testicle was pressed at the same time, which was confounded with the parts affected with the hernia. There was no change on the colour of the skin. The alvine excretions had not taken place since the formation of the tumour. The majority of these appearances united, led us to think that the hernia was an *entero-epiplocele.* When an attempt was made to return it by the taxis, in seizing it by its base, and pushing it towards the inguinal ring, and in an oblique direction from the bottom to the top, and from the inside to the outside, the patient then suffered pain towards the posterior and inferior parts of the tumour. I endeavoured, with the fore-finger of the right hand, to discover if the strangulation was considerable; and I introduced this finger always with a slight effort between the parts which had passed the inguinal ring, and the external pillar of the latter, by pushing the integuments before it.

Although my attempts to reduce the hernia of M. C. were as unsuccessful as those of the other medical gentlemen, I was far from anxious to perform the operation, which the patient, as well as his family, were very adverse to, because the circumstances did not appear very pressing; and because there were other indications to examine before determining upon it. The fever was strong, and the man had only been bled once; moreover, he had ceased to vomit stercoraceous matter; and no laxatives had yet been administered, in order to ascertain if the continuity of the intestinal canal had really been interrupted, as appeared to be indicated by the vomiting; as it does not take place, or at least very rarely, in hernia purely omental. In short, we all agreed that the constriction exercised by the inguinal ring upon the parts affected with hernia, was not very considerable.

The operation of hernia, says Bichat, is, like all others, a last resource, in which the art of observation ought to precede that of acting; and which latter ought not to be resorted to, till all other means have been exhausted.

We therefore performed a copious bleeding in the arm; and then applied a large cataplasm of crumbs of bread upon the abdomen; the patient then had a draught of the infusion of linden flowers. During the two hours which followed the application of these he was decidedly better. The vomiting had ceased; and the colic pains were scarcely felt. The blood appearing very much inflamed, and the pulse preserving the same degree of hardness, we proposed to open the vein. We saw the patient a few hours afterwards: the same calm was maintained; the blood now offered no buffy crust. We ordered the patient to be put into a warm bath; and immediately after he had left it, he was ordered two emollient injections, with the addition of a sufficient quantity of oil of olives. They were returned in the same state that they had been administered. We then had recourse once more to the attempt to reduce it. I even requested an assistant to get upon the bed of the patient, to seize him by the thighs, and take the pillow from under him, in order to observe, whether parts which thus entered the inguinal canal, might not tend, by their own weight, to fall into the abdomen in a mass. All was fruitless, the hernial tumour remained as before.

The antiphlogistic means to which we had just recourse, appeared to me the most proper for preventing inflammatory symptoms from making progress; and to permit the patient, without any inconvenience, to use a draught composed of two ounces of castor oil, twelve drops of laudanum, an ounce of syrup of orgeat, and two ounces of water, which was given at the mouth by a spoon every two hours. I left the patient at four o'clock in the afternoon. It was agreed that the emollient cataplasms should be continued on the abdomen; and that leeches should also be applied to that place, if the pains increased; and, finally, that I should be informed of the state of the patient early next morning, when I would return to perform the operation, if there should be no stools during the night.

On the 29th, at seven o'clock in the morning, I was informed that the patient appeared much less fatigued than he had been on the preceding evening; that he had even slept at intervals; that a dozen of leeches had been applied to the abdomen; that the whole of the draught had been taken, and that the vomiting was not expected to return; but that, about one o'clock in the morning, the patient had vomited a considerable quantity of liquid matter; in short, that he had not had any alvine evacuations. I requested the patient's brother to carry the two ounces of castor oil with him, and that the patient should be made to take them both off at once, immediately on the brother's return home, in order that the effects of the purgative might be produced before my arrival; and also, that he should inform the other medical gentlemen, that a consultation would be held at St Barthelemi, at one o'clock in the afternoon.

After having deliberated upon the state of the patient, we were of opinion that the operation offered favourable chances. In fact, the symptoms had not augmented; there was no painful tension in the tumour; the pulse was neither very low, nor were there any excessive abdominal pains, or loss of strength. The patient raised himself with considerable energy from his pillow, in order to relate to me what had passed during the night. Neither was there any extraordinary hardness in the hernia; nor, in short, any appearances in the patient's aspect to induce a belief of gangrene in the parts which constituted that tumour. The moral state of the patient was excellent.

After having prepared every thing necessary, I had recourse to the most common process, such as may be found described in every treatise on surgery. I may observe that there was no small artery divided; that the dissection of the cellular tissue under the skin, and of the various fasciæ over the sack, was tedious; and we expected in vain the appearance of a little peritoneal serosity which should indicate that the hernial sack was laid open; but, instead of the smooth appearance which the intestines would have offered, we only perceived in the bottom of the wound a collection of bloody vessels, which had all an oblique longitudinal direction from the outside to the inside; that is to say, parallel to the greatest diameter of the tumour.

When I had penetrated into the hernial sack, a portion of epiploon made its escape through the aperture; the latter was enlarged from top to bottom, with a straight incision-knife, directed by a common grooved director. The hernial tumour was formed almost completely by the omentum, and by a small projection of the lesser intestine which occupied the posterior part of its base, the part in which the patient suffered most when an attempt was made to reduce the hernia. I endeavoured to force in the ruptured parts, which appeared sound; but I was obliged to enlarge the ring a little towards its internal angle, by means of a probe-pointed bistoury, and conducted the concave edge of the blade upon the fore finger of the left hand. The cord of the spermatic vessels being placed behind the hernia, I had no fear of wounding the epigastric artery, which must then occupy the internal part of the inguinal ring. When the whole was reduced, I put my fore finger into the abdomen, in order to assure myself whether the hernial opening was perfectly free. I then applied a proper bandage. From the moment that the operation was terminated, the patient, who had supported it with great fortitude, experienced immediate relief. The pains in the abdomen were entirely gone, and he was not long before he had a stool. He was confided to the care of Messrs Deshayes, Durand, Renou *sen.* and *jun.*, Guilmin and Desgages, to whom I take this opportunity of offering my thanks. They have assisted me with their advice, and seconded me cordially in the operation, and with me they have divided the honour of the success in conducting M. C. to a perfect cure.

Reflections upon the Operation of Hernia.

Which is the most proper moment for performing the operation of strangulated hernia, whatever the parts may be of which it is formed? It is impossible to determine this question; and, if we consult authorities on this subject, we find that they have established no precise rule. Several writers, as Guy de Chauliac, Fabricius, Dionis, J. L. Petit, Heister, and Sabatier, preserve, upon this point, the most profound silence.

Desault, who thought that the operation for hernia ought to succeed so much better if the tumour had not been touched, expresses himself thus:—"With whatever promptitude the operation may be performed, whatever favourable symptoms may appear in the case of the patient, it rarely succeeds after the inconsiderate efforts which have been employed to force it back *."

"The operation ought to be determined on so much the more promptly, says M. Boyer, as the hernia has been suddenly formed, as the symptoms may be very intense, or the patient strong and vigorous. There are cases in which the tension is so great, that it will scarcely admit of twenty-four hours' delay †."

"It is impossible, says M. Richerand, to determine, with exactness, the moment in which the operation ought to be performed. It must, however, be decided on the more promptly, in proportion as the patient is robust and strong, and as the symptoms succeed each other with rapidity ‡."

The duty of a surgeon, when he is called to treat a strangulated hernia, is to prevent the aggravation of the symptoms; but it must always be from the actual state of the patient that he must draw the indications, which are to conduct him either to perform the operation or to defer it. In general, he will operate more promptly if there be *enterocele* than if there be *epiplocele;* and, in the supposition that the disease is at the last stage, that is to say, that the ruptured parts have passed into a state of gangrene, he ought, no less, on that account, to have recourse to the operation, since the patient, otherwise devoted to certain death, if he should be abandoned to himself, might still be saved by the formation of an artificial anus, or by invagination, a method invented and executed with success by Ramdhor, and which consists, as is well known, in introducing the superior end of the intestine into the inferior, and waiting for the adhesion of the mucous surface of the one with the serous surface of the other.

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* Œuv. chir. t. ii. p. 335.

† The same volume already cited, p. 91.

‡ L. c. p. 384.

MIDWIFERY.

Case of Congenite Ulcer on the Cranium of a Fetus, terminating in fatal Hemorrhage, on the 18th day after birth. By WILLIAM CAMPBELL, M.D. Lecturer on Midwifery, Fellow of the Royal College of Surgeons, &c. &c. &c. Edinburgh.

THE subject of this extraordinary case was a stout healthy female child, born on the 10th December 1822, after an *easy natural labour*.

During the first ablution of the infant, the woman engaged in this duty observed something unusual on the head, to which she called the attention of the gentleman who conducted the delivery. Mr Andrew Beath, surgeon, now a medical officer in the Royal Navy, who was my assistant at the time, and under whose care the mother of this young patient was placed, requested me to visit it soon after. On examining the head, I observed in the space intermediate to the posterior angle of the bregma and the occipital extremity of the sagittal suture, a point of the integuments, the size of a crown piece, presenting the appearance of having been the seat of an ulcer. The ulcerated surface was covered by a dry brown scale, such as may be frequently observed in sores from which the dressings have been accidentally removed for a night, and premature absorption on the surface of the wound has taken place, from irritation produced by the friction of the clothes or otherwise.

This scale was soon detached; the ulcer assumed a gangrenous appearance, and, in the course of two or three days, the extent of the sore was completely defined by a disposition of the diseased parts to separate from the sound. While in this stage, a carrot poultice was applied to the sore, which converted it into an open irritable ulcer, and removed the whole of the dead parts, except a small portion in the centre of the wound. Dressings of resinous ointment, containing ten grains of the red oxide of mercury to the ounce, were substituted for the cataplasm with

decided advantage; for the sore began to assume a healing aspect towards the edges, and cicatrization was well advanced on the 26th of December. On the morning of the 27th, blood was perceived to ooze through the child's night-cap, but it was thought to proceed from the ears; and, as it soon ceased, no further notice was taken of it. The following morning, however, sanguineous effusion returned in profuse quantity, when, in the estimation of the parents, two pounds of blood were discharged. It was described to escape from the centre of the ulcer in a full stream, as if discharged from a vein at the bend of the arm; and the young patient expired in a few minutes.

Post mortem Appearances.—On the 30th December, Mr Lizars divided the integuments covering the upper part of the cranium, by an incision from the posterior extremity of the sagittal suture, to the centre of the frontal bone. The parietal bones were separated from each other at the sagittal suture, and raised from the brain; and the longitudinal sinus was laid open throughout its whole extent. It was perfectly void of blood, and the brain itself completely blanched. Immediately under the ulcer already described, and upon the inner margin of the left hemisphere of the brain, a depression was observed, which lodged a portion of about $\frac{3}{4}$ths of an inch of the longitudinal sinus, that appeared to be dilated to about two or three times above its natural capacity. At this point, also, the opening into the sinus, from which the effusion proceeded, was quite conspicuous.*

During life, when the infant was left at rest, he always moaned very acutely; and when carried about, he also cried constantly, except when the head was suffered to incline upon the chest, when he became tranquil.

On the 13th March 1825, the same woman was delivered of a stout healthy male child, after an easy natural labour. She was attended by two of my pupils, Messrs Butter and Hedley, who, on examining the fetus, found an ulcer on its head, very similar to that which was observed in her former infant. It was placed about three quarters of an inch from the vertex, exactly in the course of the sagittal suture. This ulcer differed from the one described in the former case, in so far that it appeared to be the remains of some previous extensive ulceration, as it was surrounded by a large cicatrix; whereas, in the first infant, there were no evidences of cicatrization having taken place before birth.

In the case of the second infant, several months elapsed before the cicatrization of the ulcer was complete; and the young sufferer died on the 12th November of hydrocephalus, which was rather of the chronic than the acute character. On the origin of these unusual appearances I must leave my readers to draw their own conclusions.

4. PICARDY PLACE, }
June 10. 1826. }

IV. PATHOLOGY.

An Inquiry into the Nature and Causes of Inflammation. By Mr ALEXANDER TURNBULL, Civil Surgeon, at Darwar, in the H. E. I. Company's Madras Establishment.

NO morbid phenomenon, to which the animal structure is liable, is of more frequent occurrence than inflammation; and there are few diseases of which it does not form the very essence, or in which it does not occur as a prominent symptom. A correct knowledge, then, of its nature and causes, must be of primary importance to the science of medicine; and accordingly we find, that the practice of physicians has always been much influenced by the theory they happened to hold in regard to the nature and causes of inflammation.

Till of late years, the ideas of medical men respecting the nature of inflammation, were extremely vague and unsatisfactory; some referring inflammation to a congestion or fluxion; others to an obstruction, or error loci; and, by Cullen, it was referred to a spasm in the extreme arteries. All these theories disappeared, as our knowledge of the structure and physiology of the animal frame became more extended. And it is now universally admitted, that inflammation consists in a distention of the capillaries, although there are various opinions in regard to the causes and nature of this distention.

Inflammation is generally defined to be "an accumulation of blood in a part, with tumour, increased heat and redness, and a tendency to disorganization." This definition is perfectly correct, in regard to a large proportion of the varieties of inflammation; but one or more of the symptoms here detailed are often wanting; and I think we shall find, in the course of the following inquiry, *that no circumstance is common to all inflammations, except distention of the capillaries.*

Before proceeding to the investigation which is the object of this essay, I shall take a short review of some of the most popular opinions of the present time, in regard to the nature of inflammation.

I have already mentioned, that it is admitted by all, that the immediate seat of inflammation is in the capillaries, and that these vessels are distended; but that there are various opinions respecting the nature and causes of this distention.

The opinions of two of the latest writers upon this subject, Dr Wilson Phillips, and Dr Hastings, are as follows:—Dr Wilson Phillips supposes that "inflammation consists in the *debility* of the capillaries, *followed* by increased action of the larger arteries," and that the velocity of the blood in an inflamed part is diminished. Dr Hastings says, that "inflammation consists in a weakened action of the capillaries, by which the equilibrium between the larger and smaller vessels is destroyed, and the latter become distended." He also agrees with Dr W. Phillips, that the blood in the capillaries, of an inflamed part, moves more slowly than during health. Now, although the terms which these two gentlemen use, are different, yet it is evident that their theories are exactly the same. By both, weakness of the capillaries is made the first link in the chain of phenomena which constitute inflammation; and the other phenomena succeed as the effects of this weakness.

The following objection to this theory very naturally presents itself. If inflammation consists in the *debility* of the capillaries, *followed* by increased action of the larger arteries, how does it happen, that, in a common case of inflammation, the *first* thing that occurs is an increased action of the arteries, followed by distention (*debility*) of the capillaries? When we apply a stimulus to a part, the action of the arteries of that part becomes increased, followed (if the stimulus be continued sufficiently long) by inflammation; that is, according to Dr W. Phillips and Dr Hastings, by debility of the capillaries.

M. Broussais, in his excellent work, L'Examen des Doctrines Medicales, at page 105, has the following passage:—"Fixons nôtre attention sur une partie attaquée d'inflammation: la tonicité nous dit-on y est en defaut, parceque les vaisseaux se laissent distendre. Mais si les uns cèdent, c'est qu'il en est d'autres derriere eux qui se contractent plus puissamment qu'à l'ordinaire, et par consequent, la tonicité est augmentée." So far I agree with M. Broussais. But he continues, "Un faisceau de capillaires sanguins, ne rougit pas et ne se gonfle pas, parcequ'il resiste moins qu'à l'ordinaire à l'impulsion que le cœur a communiquée au sang, mais parceque ce faisceau recoit un influx nerveux extraordinaire, qui precipite les actes de la vie dont il est chargé." Leaving M. Broussais to explain what he means by an extraordinary nervous influx, I would ask, how precipitating the vital actions of the capillaries should occasion their distention! When the vital action of the capillaries is precipitated by a gentle stimulus, their caliber is diminished, instead of being enlarged.

As I shall have frequent opportunities, during the course of this investigation, of considering how far these theories are consistent with the phenomena of inflammation, I shall not now attempt a more formal refutation of them.

I shall first consider inflammation, as produced by local stimulants, as being the most common and simple kind of inflammation.

All stimulants, when applied to a living part, in a sufficient degree of intensity, give rise to inflammation[*].

Taking it for granted, that inflammation consists in a distention of the capillaries, I shall now consider how stimulants give rise to this distention.

The action of the bloodvessels and capillaries, like that of every other texture of the body, consists essentially in contraction. The increased action of the capillaries, therefore, must tend to diminish their caliber[†]. Again, a healthy vessel has more contractile power, when distended, than when contracted; and, as it contracts, so does this power decrease, until at last the vessel would have no power of contracting any farther: exactly in the same way as the contractile power of a muscle, when thrown into action, is greatest, when the muscle is longest[‡]. Distention of a vessel, therefore, can never be produced by the increased action of that vessel. On the other hand, it can only be produced, either by debility, or by an increased influx of blood from the vessel behind it.

Since stimulants increase the action of the vessels, upon which they operate, it is evident that their first effect must be to quicken the motion of the fluids in these vessels. Now, as the capillaries are extremely minute, and consequently have a very small range of contraction, they will easily yield to an unusual influx of blood; but if this influx be not very great, their distention will be small, and not sufficient to debilitate them; for their contractile power increases as they become distended; and, as soon as the increased action which propels forward the blood subsides, they will regain their former caliber.

Although the contractile power of the capillaries increases as they become distended, it is clear there must be a limit to this,—that there must be a point beyond which distention will debilitate them. Continued distention will also debilitate them, in the same way that increased action debilitates any other texture, if continued beyond a certain length of time.

By an attentive consideration of these principles, I think that we are naturally led to the following conclusion, viz. that, in cases of inflammation, produced by the local application of a stimulant, the distention of the capillaries arises from an increased quantity of blood being propelled into them, with unusual force and rapidity, by the excited arteries; and, if the stimulant be powerful or continued, the capillaries are weakened by the violent or continued distention. In such cases, then, *the first link in the chain of phenomena is increased action; the second, distention of the capillaries; and the third, debility of the capillaries*, occasioned by this distention. This order of the phenomena of inflammation is exactly the reverse of that laid down by Dr Hastings and Dr W. Phillips; for the debility of the capillaries, which I conceive is merely an effect of their distention, is considered by them to be the cause of it; and they also think that all the other phenomena of inflammation follow as effects of this debility.

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[*] "By stimulants are here to be understood all mechanical and chemical agents; certain productions of the body, which are inconsistent with health; and every thing to which medical men would apply the term irritation; for all these agents have the same effect upon the living structure,—they increase the action of the parts upon which they operate."

[†] That this is actually the case, has been clearly proved by the ingenious experiments of Dr Thomson on the capillary vessels. See Thomson on Inflammation.

[‡] See Jeffreys on the Flexor and Extensor Muscles, p. 4.

It may, at first sight, appear, that the explanation which I have just proposed, is exactly the same as that of M. Broussais; for, in the passage already quoted, he says, that some vessels become distended, because there are others behind them which contract more powerfully than usual; and at page 355, he has the following passage:—"Quant à moi je professe que toute dilatation qui n'est pas opérée par une puissance contractile antagoniste, depend d'une érection, et est le produit de l'abord des fluides à l'impulsion desquels les fibres doivent ceder, jusqu' à un certain point." So far M. Broussais holds exactly the same opinion that I do; and I deem it no inconsiderable proof of the correctness of my views, that they correspond with those of so justly celebrated a man, and who has done so much for the science of medicine in France. But although M. Broussais refers inflammation to a distention of the capillaries, occasioned by an increased influx of blood from the arteries; yet it is evident, from a passage that I have already quoted and commented on, that he has not a perfectly correct notion of the state of the capillaries in inflammation. This may be also inferred from a passage at page 106, where he says, when speaking of the capillaries,—"Je pense que, quoique distendus, ils son plus consistants, plus denses, plus resistants, et que par consequence leur tonicitée est augmentée jusqu'au moment où le travail inflammatoire a épuisé leur vitalité." Now, although M. Broussais tells us here, that the capillaries are more resistent when distended than when contracted; yet he nowhere explains why they are so; and that he is in the dark in regard to this subject, is evident from his saying, that they are at the same time more consistent and more dense. They must be quite the reverse.

I shall now point out how far the opinions I have hazarded are consistent with facts.

When a light stimulus is applied to a part, and continued only for a short time, the increased action is slight, and the distention of the capillaries soon disappears; obviously because the increased influx of blood has not been continued sufficiently long to debilitate them. We have an instance of this in redness of the skin from heat. When the face is exposed to the heat of a fire, the action of the arteries leading to the skin of the face is thereby increased, producing an increased flow of blood towards the capillaries, which, consequently, become distended; but as these capillaries have their contractile power increased by this distention, immediately as the increased action of the arteries ceases (by our withdrawing from the fire), they regain their former caliber.

In most cases of violent inflammation, the capillaries are so much debilitated by the violent or continued distention, that they remain distended after the increased action of the arteries has ceased. There is, therefore, still inflammation; but without increased action of the arteries. In other words, the inflammation has become chronick; and it is to be cured not by remedies which diminish increased action, but by those which are calculated to restore the capillaries to a healthy state, to diminish their caliber: tonicks, astringents, stimulants, &c. are now indicated.

I conceive, then, that there are two kinds of inflammation, the acute and chronic, which differ most materially from one another. The former consists essentially in a violent distention of the capillaries, *with increased action of the arteries;* and the capillaries may at the same time either have their contractile power increased, or be debilitated. The latter consists essentially in distention and debility of the capillaries, *without increased action of the arteries* leading to them.

Let us now inquire whether the velocity of the blood in the capillaries of an inflamed part be increased or diminished. I imagine, that, like the action of the capillaries, it varies in different cases.

It must be kept in mind, that, in all cases of acute inflammation, that is, in all cases in which the action of the arteries leading to an inflamed part is increased, a greater quantity of blood passes through the inflamed part in a given time than in health. But it does not necessarily follow from this, that the velocity of the blood in the capillaries is increased; for the velocity of a fluid passing through a large tube, is always less than that of a similar fluid passing through a small tube, the propelling power being the same. Now, in all cases of chronick inflammation, that is, in all cases where the capillaries are distended and debilitated, and the action of the arteries not increased, the velocity of the blood must be diminished; for the areas of the capillaries are greater than during health, while the propelling power is the same.

On the other hand, I imagine, that, in acute inflammation, the velocity of the blood in the capillaries is sometimes increased, at other times diminished. Although the distention of the capillaries, in acute inflammation, tends to diminish the velocity of the blood; yet this must, in most cases, be counteracted by the increased action of the arteries, in other words, by the increased propelling power; and in some cases also in a great degree by their own action being increased by their distention. The velocity of the blood in the capillaries, in acute inflammation, may be diminished when the capillaries are debilitated. For suppose the blood moves in healthy capillaries, with a velocity equal to 10, and that the increased action occasioned by the application of a stimulus raises the velocity to 12, the increased influx of blood occasioned by this distends the capillaries to such a degree as to reduce the velocity of the blood 3 degrees, that is to 9 or 1 degree lower than in health.

It would appear, then, that in all cases of chronic inflammation, the velocity of the blood's motion in the capillaries is diminished; that in acute inflammation, it is sometimes increased, at other times diminished, according to the increased action of the arteries and capillaries; and that, in every case of acute inflammation, more blood passes through the inflamed part than in health.

I conceive that the contraction of the pupil is applicable upon the same principles as those that I have just brought forward, for the explanation of the phenomena of inflammation; except that, in this instance, the distension of the capillaries is not inconsistent with health; the capillaries of the iris being dilatable to a certain extent, without thereby being debilitated.

The contraction and dilatation of the pupil have generally been explained upon the supposition, that there are two sets of muscular fibres in the iris; one of which, the circular fibres, contract; the other, the radiating fibres, dilate the pupil. But, to say nothing of these fibres never having been demonstrated to exist, let us enquire what would be the effect of such a structure. When a stimulus is applied to the retina, these two sets of fibres would oppose each other, so as to keep the pupil motionless. But we know, that the pupil contracts upon the application of a stimulus, and dilates when stimuli are withdrawn.

When we examine the iris accurately, all that we can discover is, that it is composed of an immense number of small vessels. Something like circular and radiating fibres are certainly discernible; but are not these rather minute vessels?

It is evident that the vessels of the iris must be more tortuous, when the pupil is dilated, than when it is contracted; and that their distention must straighten them, must enlarge the bulk of the iris; and, *as the iris can only yield at its inner edge*, must consequently occasion a diminution in the size of the pupil. I conceive, then, that the motions of the iris are effected in the following manner. Upon the application of a stimulus to the retina, the action of the arteries leading to the iris is increased, producing an increased influx of blood into the capillaries of the iris, which thereby become dilated; and this dilatation occasions the contraction of the pupils, as above explained. When the stimulus which has in this way effected the contraction of the pupil is removed, the increased action of the arteries subsides; consequently the quantity of fluid in the capillaries of the iris is diminished, and the pupil dilates*.

The dilatation of the pupil must be much facilitated by the contractile power of the capillaries having been increased by their distention; for as soon as the increased action of the arteries, which kept them violently distended by an increased influx of fluid subsides, they will immediately contract on their contents, and regain their former caliber.

The above theory is properly applied by authors to the explanation of the phenomena which take place in erection; as of the papillæ of the tongue. When sapid or pungent substances are taken into the mouth, the arteries leading to the papillæ are stimulated, their action is increased, and, consequently, they throw a larger quantity of blood to the papillæ, whereby they are distended, and, of course, erected.

The same principles are likewise applied to the explanation of the phenomena of perspiration. When the arteries, which supply the periphery, are excited, the quantity of blood propelled towards the skin is increased; the capillaries are, consequently, distended, and the thin part of the fluid escapes externally. That this explanation is correct, may be demonstrated by an appeal to facts. When the body is exposed to heat, the first thing which happens is an increased action of the arteries towards the surface; next a glowing sensation and fulness of the skin; and, lastly, a flow of perspiration. The same thing is experienced in taking hard exercise. In intermittent fever, there is first the cold stage, with dry and constricted skin, next the hot stage, when the skin becomes flushed, full, and hot; and, lastly, the sweating stage, when the pores of the skin are distended, so as to allow of the flow of the perspiration. In all these cases, the order of the phenomena is, 1*st*, increased action; 2*d*, distention of the capillaries; and, 3*d*, perspiration.

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* This explanation of the motions of the iris occurs in very early authors; but we have scarcely met with so luminous an application of the hypothesis, to the appearances, as that delivered above by Mr Turnbull.—Edit.

The abstraction of the natural stimuli of the animal economy from the body, or from a part of the body, occasions languor and debility of the whole body, or of the part from which the stimulus has been immediately abstracted. Thus, the abstraction of the natural stimulus heat, occasions general, or, if partial, local debility. The abstraction of the natural stimulus light, occasions debility of the eyes; and long abstinence from food weakens the stomach.

Debility, produced by the abstraction of the natural stimuli of the living body, powerfully predisposes to inflammation. For instance, a part that has been exposed to a great degree of cold, or, in other words, which has been deprived of the natural stimulus, heat, is inflamed by the application of even a moderate degree of warmth. A small quantity of food will inflame a stomach that has long fasted; and the eyes of a person, who has been long in darkness, will become inflamed if exposed suddenly to light. All this is exactly what we might expect, if the explanation which I have given is correct. For when a part is debilitated, of course the capillaries will be the more easily distended, by an increased influx of fluid. A very slight stimulus, which merely increases the vital phenomena of a part in health, is sufficient to occasion inflammation in the same part, when its capillaries are debilitated; evidently because the capillaries, when debilitated, yield more readily to the distending power of the blood, propelled forwards by the arteries. Farther, if the capillaries be *very* much debilitated, the usual quantity of fluid, circulating through the part, will be sufficient to distend them. For there can be no doubt but the same effect will be produced, by increasing the power of the arteries, or by diminishing that of the capillaries.

Some people are more liable to inflammation than others; and many individuals are predisposed to inflammation of particular organs. This most probably arises, in many instances, from certain capillaries being unusually weak, from certain arteries being particularly irritable, or from both of these causes combined. Is not the latter the case in scrofulous subjects? I believe, at the same time, that many of the phenomena exhibited by those inflammations, which may be termed constitutional, depend materially on the influence of the nervous system; keeping in view, however, that the nervous system can only act by increasing, diminishing, or modifying, in some way or other, the action of the vessels.

Inflammation often arises at a distance from the part to which the irritation which occasions it is applied. We have frequent instances of this in inflammations of different parts of the periphery, arising from irritations in the intestinal canal—in inflammations of the glans, from irritations in the urethra, &c. &c. I imagine that, in these cases, the inflammation is produced exactly in the same way as inflammation arising from the direct application of a stimulant; except that, in the one case, the arteries are stimulated directly, in the other indirectly, or sympathetically.

I confess my complete ignorance of the causes of sympathy. But it is not necessary that I should point out the causes of sympathy, in order to substantiate the explanation I have given of this variety of inflammation. We know from experience, that, when the action of one part is increased, the action of one or more distant parts will be also increased; and farther, that the increased action, which arises sympathetically, is often superior to the primitive excitement. This physiological fact I apply in the following manner: A stimulus applied to a part, increases the action of the vessels of that part, but stops short of producing inflammation. As a consequence of this, the action of the vessels, of another part, is increased, and to such a degree, as to occasion a distention of the capillaries in the manner already explained. If the capillaries of the part, in which the inflammation is excited sympathetically, be debilitated, the inflammation will be the more easily produced.

When inflammation has been once excited in a part, it acts as a stimulus, and gives rise to inflammation, sometimes in the contiguous parts, at other times in parts at a distance, in the same way that other stimulants do; and if an inflammation be severe, or situated in a vital part, it produces general increased action of the arterial system.

We might be naturally led to expect *à priori*, that an accumulation of blood, in the capillaries of a part, should act as a stimulant, of which the effect will be different according to the nature of the part in which it is situated. If the inflammation take place in a part which possesses extensive sympathies, the irritation will probably be communicated to the vessels of another part, and in this way give rise sympathetically to inflammation. Again, when inflammation is excited in a part, which is plentifully supplied with vessels and nervous matter, there is almost invariably increased action of the heart and arteries. This evidently arises from a powerful sympathy existing between these parts and the centre of the arterial system. Slight inflammation of the stomach and intestines, powerfully excites the heart and arteries; while a much more severe inflammation of the skin produces no such effect; in the same way that a slight stimulus taken into the stomach increases the action of the arterial system, while the same stimulus would not have the slightest effect upon the skin.

Hemorrhagy is produced in the same way as inflammation, and is frequently preceded by it.

When inflammation occurs in a mucous membrane, the capillaries are often so much distended and debilitated, as to allow the blood, sent forward with force by the arteries, to be discharged upon the surface of the membrane. This is an example of hemorrhagy preceded and caused by inflammation; and is of frequent occurrence in dysentery.

If a powerful stimulus be applied to a part, the capillaries will be so much distended and debilitated, by the sudden influx of blood from the excited arteries, that the blood will be discharged externally. And the capillaries of a part may be so much debilitated, that a slight increased flow of blood into them, will be sufficient to distend them to that degree, which will cause them to pour forth red blood. In these two cases the hemorrhagy occurs at once, without being preceded by inflammation.

It frequently happens that there is a discharge of serum, albumen, mucus, pus, or some other fluid, from the capillaries of an inflamed part, which varies according to the nature of the part, and also according to the intensity of the inflammation. This is owing to the alteration of the capillaries. Might we not expect, *à priori*, that the secretion of the capillaries should be altered by their distention and debility?

Discharges from a part whose vessels have been much stimulated, often prevent an inflammation, or cure the inflammation, after it has actually occurred. An increased action of the vessels of the skin or mucous membranes, sufficient to have produced an inflammation in any other part, in general only gives rise to an increased flow of the natural fluids of these parts. This arises from the following circumstance. A large proportion of the capillaries of the skin and mucous membranes open externally, so as to allow of a ready discharge to the increased influx of fluid sent forward by the excited arteries, which, in this way, escape dilatation.

There are a number of morbid phenomena produced by the application of irritations to certain textures, exactly resembling inflammation in their nature; and which nevertheless do not correspond to the common definition of that disorder. I shall denominate them *subinflammations* *. Like all other inflammations, they consist in a dilatation of the capillaries, with or without debility, and with or without increased action of the arteries; but, unlike other inflammations, they are never accompanied by redness, and seldom by increased heat or pain. It may be denied that this is inflammation; but if it is not, what other term can be applied to it? It certainly does not bear all the characters of a common inflammation; but it is produced by the same causes, and consists, essentially, in a similar state of the vessels. The term subinflammation is, I think, unobjectionable.

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* This term I have borrowed from M. Broussais; who applies it, however, in a sense different from what I do. He gives no definition of it, and uses it in rather a vague manner. (*It is distinguished from subacute inflammation by the absence of redness, heat, and pain.*—Edit.)

We have daily instances of this kind of inflammation, in serous membranes, in the cornea, in certain glands, and some other textures. How often, on opening bodies, do we see patches of lymph, between the layers, or upon the surface of the peritoneum and pleura; although no pain or other symptom had existed during life, which would have led us to suspect their existence. Now, that these were the effects of irritation, and were owing to a dilatation of the capillaries by an opaque fluid, may be inferred from analogy; for we can observe the very same phenomena arise in other textures, which are more immediately under our view.

No organ of the body affords such facilities for the study of the phenomena of inflammation as the eye. For, in the eye, we are enabled to study them as presented to us by several completely different textures, which admit of the most minute and accurate examination; and can observe the same morbid phenomenon, *inflammation*, putting on different appearances, as it proceeds from one texture to another.

The conjunctiva is generally the first part affected by external irritation. In this case, we have an opportunity of examining inflammation as exhibited by a mucous membrane. When the irritation is slight, it merely occasions the distention of a few capillaries, in the manner already explained, giving rise to an appearance like a fine red network over the sclerotic coat. If the irritation be continued, these distended capillaries increase in number, until at length the sclerotic is covered by one red mass.

Inflammation of the conjunctiva of the cornea, whether extending from the sclerotick conjunctiva, or arising at once without previous inflammation of any other part, puts on a very different appearance from that just described. The capillaries are seldom injected with red blood; and when this does occur, there are seldom more than a few branches so affected. They are almost always injected with an opaque white fluid, giving rise to cloudiness of the cornea, which, if extending from the circumference of the cornea towards the centre, becomes gradually narrower; if from the centre towards the circumference, becomes gradually wider. Now, although we cannot demonstrate to an absolute certainty that the capillaries of the corneal conjunctiva are dilated, and filled with an opaque fluid, yet, that they are so, may be justly inferred, nay, I think, placed beyond doubt, by the following considerations. First, We know that the capillaries of this membrane are sometimes so much distended as to admit red blood. Why, then, should not the causes of this distention, if applied in a slighter degree, give rise to a less distention, which will only admit a lymphatic fluid? Secondly, This opacity, or subinflammation, is followed by exactly the same phenomena as true inflammation. It sometimes produces a deposition of lymph, giving rise to specks; sometimes suppuration, occasioning pustules of the cornea; and sometimes ulceration, which occasionally proceeds to such an extent, as to penetrate the cornea, and evacuate the aqueous humour.

Let us now consider inflammation of the iris. When inflammation attacks the iris, it proceeds with the greatest rapidity, and soon destroys its structure, unless arrested by the most active treatment. Iritis is always attended by a diminution, and sometimes by an entire obliteration of the pupil; which is at the same time generally displaced, or distorted from its natural rounded form. All this is exactly what we might expect, from the explanation already given of the motions of the iris. The iris being a loose vascular membrane, its vessels are easily distended by an unusual influx of blood. This dilatation contracts the pupil, in the manner already described. And, as the inflammation is frequently partial, or more severe at one part of the iris than another, the increase in the bulk of the iris must also be partial; and it will therefore project inwards more at one part than another, and, consequently, occasion irregularity of its inner edge. This is the cause of the punctured appearance which the iris sometimes assumes in iritis; and also of the displacement of the pupil, which is frequently drawn to one side.

I conceive that cataract is exactly of the same nature as cloudiness of the cornea, or of the serous membranes. It is a subinflammation. That such is its nature, may be concluded from the circumstances of its arising generally from some irritation; and, when it has been cured without an operation, from the mode of treatment employed in its cure being always such as what would have been used under similar circumstances, for the cure of a true inflammation.

One of the first effects of the application of a stimulus to the eye, is an increase of the secretion of the tears; and in this respect the lachrymal gland bears a striking analogy to all other glands, the ducts of which open upon mucous membranes. When a stimulating substance is taken into the mouth, the flow of the saliva is increased. When the food passes from the stomach into the duodenum, there is an increased flow of bile. Irritation of the glans increases the secretion of the testicle; and a sound introduced into the bladder, and irritating the ureters, increases the flow of the urine[*].

Some varieties of inflammation of the conjunctiva are accompanied by a constant flow of tears; while, in other instances, that secretion is diminished or depraved.

Although these facts may at first sight appear to be of little importance, yet, I believe, that, when considered in relation to the intestines and liver, they will throw considerable light on many affections of the latter organ, which hitherto have been but imperfectly understood.

I shall now say a few words in regard to inflammation of mucous membranes, particularly of those of the primæ viæ, which I imagine are much more frequent than is generally supposed, and give rise to some of the most violent diseases which afflict mankind.

I imagine that the mucous membranes, like many other textures, are liable to two kinds of inflammation, viz. true inflammation, which is characterized by increased heat, redness, and swelling; and subinflammation, in which one or more of these symptoms are wanting. The latter is generally the cause of all those symptoms, which are described by authors under the terms Irritations and Disorders of the Primæ Viæ.

True inflammation can only occur in mucous membranes, when the capillaries leading from the arteries to the veins become distended, so as to admit red blood. When the secreting vessels which open upon the surface become distended to such a degree as to admit the red globules, hemorrhagy is the result. The bloody discharges in dysentery originate in this way.

The first effect of the application of a stimulus to a mucous membrane is an increased action of the arteries; and, consequently, an increased discharge of the natural fluids of the part. If, however, the stimulus be powerful or continued, and especially if the capillaries be debilitated, these vessels will become distended to such a degree as to cause an alteration in the nature of the discharges. We have daily examples of this in the alterations in the discharges of the mucous membranes lining the mouth, nose, eye-balls, &c. It is a variety of subinflammation, and may, or may not, be accompanied by true inflammation of the membrane in which it occurs.

Gonorrhea, ophthalmia of the conjunctiva, cynanche, gastritis, and enteritis, are instances of true inflammation, and of mucous membranes. Some varieties of gleet, furred tongue, dyspepsia, diarrhea, and some of the milder forms of dysentery, are examples of subinflammation of mucous membranes.

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[*] See Bichat's Traité des Membranes, p. 60.

The general opinion in regard to the etiology of dysentery is, that it is occasioned by disorder of the liver. In my opinion, the derangements of the liver are the effects, not the causes, of dysenterick complaints. I have already mentioned, that the state of the secretions of glands is very much influenced by the excitement of their excretory ducts. Accordingly, we find the greatest variety in the biliary secretion in dysenterick complaints.

As my object in this essay is to point out the nature of inflammation in general, I shall refrain from saying more at present on inflammation of mucous membranes; especially as I intend to make inflammation of the mucous membranes of the primæ viæ the subject of a separate essay.

I shall consider, in as concise a manner as possible, the general curative indications in inflammation. A detail of the remedies applicable to all the different varieties and shades of inflammation, would embrace very nearly the whole practice of physic.

In all cases of acute inflammation, the first, and sometimes the only indication, is to diminish the increased action of the arteries. The most powerful remedy for this purpose is undoubtedly bloodletting, which, besides acting as a powerful sedative, diminishes the quantity of blood in the vessels, and thereby enables the distended capillaries to contract. The *modus medendi* of bloodletting, then, is twofold; diminishing the increased action of the arteries, and lessening the quantity of the blood, which is the immediate cause of the distention of the capillaries.

Cold is a very powerful remedy in many cases of acute inflammation. I have already taken notice of its sedative property; and to this property is chiefly owing its effects in inflammation. It diminishes the action of the arteries; its operation may, at the same time, consist, in a great measure, in contracting the capillaries.

It is not necessary for me to take notice of any of the other remedies which are employed in acute inflammation; for they all act by removing exciting causes, or by diminishing the increased action of the arteries.

I do not recollect having seen, in any author, a satisfactory explanation of the operation of stimulants in the cure of inflammation. When talking of the *modus medendi* of mercurial applications in inflammation, M. Broussais says, that "they act by opposing irritation to irritation." I must confess that, to me, this is quite unintelligible.

Stimulants are only applicable to cases of chronick inflammation; that is, to those cases which consist essentially in debility of the capillaries. Their operation consists in increasing the action of the debilitated capillaries, which are thereby enabled to contract to such a degree as to regain their former caliber. Upon this principle depends the utility of all stimulants, tonicks, and astringents in chronick inflammation.

In subinflammation, antiphlogistick or stimulating remedies must be used, according as the case may be acute or chronick in its nature; and our practice must be regulated by exactly the same principles as those by which we are guided in cases of true inflammation. I shall illustrate this by one example. In subinflammation of the cornea, we employ the strictest antiphlogistic plan of treatment, as long as the inflammation is acute; but as soon as it becomes chronick, we employ stimulating applications.

It is worthy of remark here, that all stimulating remedies ought to be used comparatively weak at first, and that their strength must be gradually increased. The reason of this is, that were we to use a strong stimulus at first, the action of the *arteries* would be increased; and the disease would be aggravated by the consequent increased flow of blood. But by stimulating gradually, we avoid this: for the arteries become gradually accustomed to the stimulus, while the capillaries at the same time are gaining tone.

From the circumstance of mercury being a very powerful remedy in a great variety of inflammatory complaints, it has been supposed by many that it possesses a sedative property. But I think, that the slightest attention to the subject must convince any one, that it acts as a powerful and general stimulant. "When given in moderate quantity, it communicates general vigour; it increases the force of the circulation when this has been languid; by the increased vascular action which it excites it gives to the blood the disposition to assume the buffy coat; and by its stimulant operation on secreting organs, it promotes the secretions, and hence acts as a very general evacuant *."

The good effects of mercury in inflammation, are, I imagine, to be chiefly referred to two operations. *First*, It acts as a general stimulant to the arterial and absorbent systems; thus equalizing the action of the arteries and capillaries; the latter receiving a degree of stimulus, which enables them to regain their former caliber; and the former being stimulated generally throughout their whole extent, thereby prevent a determination towards the inflamed part. *Secondly*, It acts by its general evacuating property, whereby it occasions a great reduction of the circulating fluids. This reduction of the circulating fluids, at the same time, counteracts, or (if I may be allowed the expression) keeps within bounds the increased action of the arteries, which otherwise might be carried to a great degree by the stimulating property of the mercury.

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* Murray's Mater. Med. vol. i. p. 196.

These considerations clearly point out to us why mercury is most useful when the inflammation has become somewhat chronick, and why it is necessary to affect the system with mercury, in order to derive benefit from it.

I decline saying any thing of the *modus medendi* of blisters, sinapisms, &c. as I can give no satisfactory explanation of it. But that these are extremely useful, and sometimes very powerful remedies in many inflammations, no one can doubt.

In order to make more conspicuous some of the more important conclusions, to which I have been led by the different facts and reasonings contained in this investigation, I shall here recapitulate them.

1*st*, There is no circumstance common to all inflammations, except distention of the capillaries.

2*d*, Acute inflammation consists in a distention of the capillaries, with or without debility, and an increased action of the arteries leading to them.

3*d*, Chronick inflammation consists in a distention and debility of the capillaries, without increased action of the arteries leading to them.

4*th*, A number of morbid phenomena, which I have denominated subinflammations, exactly resemble true inflammation in their nature, and require the same remedies; but are not characterized by the symptoms of increased heat, redness, and swelling.

5*th*, The velocity of the blood's motion in the capillaries is diminished in all chronick inflammations; and is sometimes increased, at other times diminished, in acute inflammations.

6*th*, Hemorrhagies are of exactly the same nature, and are to be treated on the same principles as inflammation.

7*th*, The most important and general principle to be kept in view in the treatment of inflammation, is, that acute inflammation must be treated upon the antiphlogistick plan, and chronic inflammation with stimulants, tonicks and astringents.

V. ANATOMY (Human).

Description of a Monster, in whom the Upper and Inferior Extremities were entirely wanting. By Charles Hastings, M. D. Physician to the Infirmary, Worcester *.

There was lately born in this neighbourhood, a monstrous production, in which the upper and lower extremities are wanting. By my request, Mr Pitman of this town took a drawing of it, which accompanies the following short description of the child; the first part of which was written on the 12th of April 1824, three days after its birth.

The mother, Charlotte Rawlins, is about 36 years of age, and had previously borne three perfect children. She went beyond the usual period of gestation, and says she never felt any motion in her womb, as in former pregnancies. The father is a robust man, between 60 and 70.

Head.—There is a great quantity of black hair on the head, and the bones are more perfect than they are usually found at birth. The nose is very prominent, and there is a red mark upon it, which extends to the upper lip. The fontanelles are rather small.

Trunk.—The spine appears perfect, and so are the ribs. All the bones seem harder than they usually are at birth. There is a clavicle and scapula on each side, with muscles attached, which move the scapulæ freely. There is an acromion to each scapula. The glenoid cavities are absent.

The clavicle is united, as usual, to the sternum and acromion. The sternum is natural.

Pelvis.—The sacrum and os coccygis are natural. Ossa innominata appear perfect in every respect, excepting the acetabulum, which is wanting. On the right side there is not the least attempt at the production of a lower extremity; but on the left side, at the part of the ossa innominata, into which the head of the thigh-bone is generally received, there is a little process in the shape of a finger, consisting of two small bones united by ligaments, and covered with skin and cellular membrane. This projection apparently has muscles attached to it, as it is constantly moved by the cries or struggles of the child. The projection is thick at the base, and runs to a point, and there is a nail affixed to it. The length of the projection is $1\frac{8}{10}$ inches. The child cries loudly. It is fed, as the mother cannot suckle it.

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* See Edinburgh Medico-Chirurgical Transactions, vol. ii. p. 39.

April 12. 1824.—I have this day again seen the child, and find it grown and looking healthy. The mother is now able to suckle it.

October 20. 1824.—The desire of the parents to derive pecuniary advantage, by exhibiting this monstrous production, has proved fatal to it. They carried the child to most of the towns in this neighbourhood, and exhibited it to many hundred persons. In one of these excursions, inflammation of the lungs came on, and the child died about three weeks since, after a few days illness.

I have searched such writers as I have been able to refer to, particularly Heister, Ambrose Parey, the article Monster in the Encyclopædia Londinensis, and Mr Lawrence's paper in the 5th volume of the Medico-Chirurgical Transactions; and although I find an infinite variety of cases, in which the members were extravagantly out of proportion, both on the side of defect and excess, I have met with none in which the upper and lower extremities were entirely absent.

Observations on the Comparative Anatomy of the base of the Iris, and its mode of union with the Cornea, Annulus albus[*], *and Choroid Tunick.* By R. Knox, M. D. F. R. S. E. Lecturer on Comparative Anatomy, &c.

The following observations are intended as supplementary to a memoir I had the honour of presenting to the Royal Society of Edinburgh, and were written with the hopes of elucidating the anatomy of one of the most interesting, though, at the same time, most complex, of the organs of sense. I moreover entertain hopes of thereby enabling the physiologist to determine on the comparative importance of the various structures in effecting those changes which are supposed to take place in the interior of the eye-ball, on the occasion of every change of its focal distance. Those most conversant with anatomical investigation will best appreciate the extreme difficulty of the undertaking.

Numberless dissections have convinced me, that no great errors can result from viewing the eye in all the mammalia, man of course included, as composed essentially of the same component humors and tunicks, varying, however, very much as to respective situations, and not unfrequently in the predominance of one structure to the almost total exclusion of others. This great analogy in the structure of the eye has been extended by most anatomists to all *vertebral animals*; and it has been reckoned a fair and legitimate induction from facts, to apply to the human eye the result of a natural analysis of some of the textures in the eyes of fishes, birds and reptiles, and *vice versa.* I might avail myself of this liberty, which has been tacitly, rather than avowedly, granted to anatomists, and which we find sanctioned by the great names of Haller, Camper, Monro and Hunter; but every one, I think, must have remarked, that considerable confusion has arisen out of this mode of reasoning, and, what is still worse, distinguished anatomists have neither understood each other, nor been able to trace the anatomical distribution of several tunicks of the eye, because their presence or absence in man was inferred from analogies drawn at random from animals, whose place in the scale of creation was infinitely removed from him.

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[*] The *annulus albus* is that white, fibrous ring, of a wedge-like form, interposed between the external surface of the choroid and the internal of the sclerotick membrane, at its junction with the cornea.

To enable the physiologist to avoid these errors, I have endeavoured to sketch very briefly, 1*st*, The actual anatomy of the base of the iris, as seen in most mammiferous animals; and, 2*dly*, The distribution of the same in birds. Whenever I find occasion to resort to other classes of animals, such, for example, as fishes, I shall directly state the occasion of doing so, in order that the real nature of the analogy may be correctly judged of.

On the actual structure of the Iris in man and other mammiferous animals.

By the term iris, I mean that generally circular-shaped movable curtain, dividing the aqueous humor into two distinct chambers, communicating with each other only by the pupil. Its limits towards its base I consider as distinctly marked *anteriorly*, by its insertion into the cornea, or at least into the point at which the cornea and sclerotick unite; and *posteriorly* by the imaginary line at which the membrane contributing to form the fimbriated and unattached edges of the ciliary processes is reflected from these upon the iris itself. These two points coincide in man and in quadrumanous animals over the world. The same structure essentially, whatever that may be, is found to prevail throughout the whole breadth of the iris in them, and at all points; and the breadth of the membrane we call iris, measured posteriorly, does not sensibly exceed its anterior surface. Nor have we any difficulty in deciding on what part we shall term iris, and what does not merit that name, the whole being apparently a movable curtain. But this is by no means the case with other animals, such, for example, as the *ruminantia.* In them, the moving iris is of unequal breadth; the points which I have considered as marking its base do not coincide; the anterior surface exceeds the posterior greatly in breadth; and, on passing a very sharp and fine needle through the iris in an antero-posterior direction, at any point near its base, it will be found to have transfixed the ciliary body about its middle. In them we must consider the iris as divided into two distinct portions, a *pupillary* or thin part, and a *choroideum*, exceeding the other very much in thickness, and possessing a structure differing in certain respects from the former. At present we have to do with the thin portion only, as being in all probability the sole part of the iris possessing the power of motion *.

The real structure of this portion of the iris, which, in men, and the quadrumana and birds, extends to its base, and, therefore, constitutes the whole iris; but, in other mammiferous animals, forms only a portion of it (varying very much in breadth, as has been already noticed), has been determined by anatomists, in various ways; often by preconceived theoretical views. Some have considered it as entirely composed of vessels; others view it as muscular; but the greater number have, as it were, confounded their notions of its structure, partly from theory, and chiefly from an imperfect sort of comparative anatomy, and have unhesitatingly transferred the structure, as seen in other animals, to man himself, neglecting often to state the source whence they have derived their ideas. To such a length has this practice gone, that, for common anatomical demonstration, it has been usual to substitute the eye of the sheep, ox, horse, or some other animal, for that of man himself. I shall now combine these methods of demonstration, carefully discriminating what may be readily seen in man and animals, from that which we may infer by a comparison with each other.

When we view the iris with a strong magnifying glass, such as is used by naturalists, we perceive that it possesses a peculiar homogeneous structure, abounding in bloodvessels and nerves, and resembling none of the other textures of the eye, with the exception of the annulus albus. The most powerful microscope gives us little additional information; it displays, in a more marked manner, the sphincter-like disposition of the texture of the iris towards its pupillary margin; and it has presented to some a certain appearance of a fibrous structure, on which, however, observers are by no means agreed. It seems to be unfortunate for those who support the theory of the muscularity of the iris, that they have fixed generally on that portion of it as muscular, which we know to be membranous, and which it most certainly derives from the choroid tunick. In reply, therefore, to all assertions of this nature, we may employ the expressions Morgagni used to Mangetus, in his Adversaria Anatomia: "Illud unum optarem, ut ab omnibus diligentioribus anatomicis eadem agnita et accepta essent." Finally, there is no such thing as dividing it into distinct layers in man, or in the quadrumana. Any further details, therefore, relative to it, are the result of mere hypothesis, of conjecture, or of inductions as to its structure, drawn from comparative anatomy; so that those who do not admit the accuracy or importance of these deductions, whatever that may be, must as yet rest contented with considering the iris as an organ, of which the structure is altogether unknown, and likely to continue so. But if the appeal to comparative anatomy be sustained, then there is no great difficulty in demonstrating, that the iris, including the uvea, is composed of four distinct layers.

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* It was suggested to me by Dr Brewster (by whose advice I have so greatly profited throughout the whole of these inquiries into the organ of vision), that this apparently more fixed portion of the iris might yet possess the power of motion. Having soon after had occasion to remark the extreme accuracy of this distinguished philosopher in every thing regarding the theory of vision, I am fully inclined to adopt his views relative to this portion of the iris in certain mammiferous animals, as the ruminantia, and to regard it merely as *less freely* movable than the pupillary portion, or true iris.

In most ruminating animals, as the deer, the inner surface of the cornea possesses an investing membrane, altogether different and distinct from the more external layers of the cornea, and resembling, essentially, the capsule of the crystalline humor. I have described it minutely in my former paper, on the comparative anatomy of the eye. The mode in which it is reflected from the cornea upon the anterior surface of the iris, differs in various vertebral animals. In some it presents numerous little fibres, but these may, perhaps, belong more properly to the second layer or true iris, and the transparent tunick I now describe, may pass into the iris, by investing these short fibrous bodies, and dipping down between them. However this may be, for I will not dispute the point, the transparent tunick of which I speak, may, in successful dissections, be stripped partly of the iris itself, by commencing with its corneal portion. But its real nature and anatomical distribution are best seen in fishes; for in them it may, in a great measure, be dissected from off the anterior surface of the iris.

I consider the second layer, or that immediately behind the transparent one, which we shall call the tunick of the aqueous humor, as the true iris; it is coloured; its texture is peculiar and unknown to me, but it evidently possesses numerous nerves and bloodvessels; it seems to me to be wanting in fishes [*]. I consider it as peculiar and distinct from all the other membranes, for its attachment is principally to the cornea, and to that portion of the sclerotic immediately connected with the cornea. It has interposed betwixt it and the anterior aspect of the annulus albus, in a small triangular space, a quantity of loose and very delicate dark-coloured cellular membrane, serving to unite and to make those parts contiguous. These observations are made from numberless dissections of the eyes of animals, such as the horse, deer, ox, &c. but I consider them as in part applicable to man and to the quadrumana. As, in so doing, I differ from the high authority of Sœmmering, and, perhaps, of many others equally celebrated, I shall here state my reasons for doing so.

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[*] Some anatomists think it analogous to the *erectile tissue*; I must fear that this notion is also compounded partly of hypothesis and partly of observation.

Every anatomist and surgeon knows, that the iris in man may be detached with extreme facility from its attachments, whatever these be, and that this forms a very serious obstacle to the surgeon in the operation for artificial pupil. We are informed by Scarpa, that in one of his early operations for artificial pupil, he inadvertently tore the iris from its attachments at its base, with a facility which surprised and vexed him; but that, taking advantage of the accident, he declared the operation concluded, and, indeed, a new pupil was formed, though not exactly in the situation he could have wished *.

Notwithstanding this ease with which the iris may generally be removed from its attachments at its base, we know, from dissections of the quadrumana (and we have every reason to think them applicable to men), that on drawing the iris back towards the insertion of the optick nerve, the cornea having been of course removed, its more lateral portion or layers will separate from the cornea and sclerotick with the utmost ease; but that, on continuing to carry the iris backwards, we may generally bring along with us the ciliary body, and processes. The reason of this becomes apparent, when we perform the dissection with the aid of a good glass and strong light: we perceive distinctly that the insertion of the iris of the eye is effected by means of a very delicate, loose, cellular, and highly elastick tissue, and that this portion of the iris is not continuous throughout its whole thickness with the annulus albus; but it is not so with the inner portion and layers of the iris, which are, to a certain extent, connected slightly with the annulus albus, but chiefly with the choroid coat or ciliary body, with which, indeed, the more internal layers of the iris are evidently continuous.

If we now appeal to comparative anatomy, we find that these opinions may be most readily proved. In the deer, for example, of which I have caused careful drawings to be made, the choroid coat, as it approaches the annulus albus, becomes in many places excessively thin and transparent; externally it absolutely disappears, so that at this point the annulus albus is covered only by a little very delicate, cellular tissue, connecting it loosely with the sclerotick. Anterior to this, the annulus albus is firmly fixed into the sclerotick, and constitutes the great and general connecting point of all the internal humors and tunicks with the external. When the choroid coat, now become a ciliary

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* This accident has since been improved into a regular process for form' artificial pupil.

body, advances anterior to the annulus albus, it increases suddenly to at least four times its thickness, and continues to do so at all that part corresponding with the ciliary processes: external to it, for a very short space, it has placed betwixt it and the sclerotick, the loose, dark coloured cellular tissue, already described. Immediately anterior to this it meets the external layers of the iris, already minutely described, and, suddenly diminishing in thickness, sends forward a dark coloured dense membrane, which may be traced almost to the pupillary margin of the iris.

In fishes, the anatomy of all these parts is much more simple; the annulus albus is merely rudimentary, and evidently serves the purpose of a ligament; and both the layers of choroid pass on to form the real, though in them immovable iris. It is evident, I think, that deductions ought not to be drawn from the anatomy of the eye in these animals, or at least with great caution; yet, distinguished anatomists have not hesitated to do so in a sweeping and general manner, and in defiance of all strict physiological analysis.

If the foregoing views of the structure and anatomical relations of the base of the iris be adopted, we cannot hesitate in answering certain questions which physiologists have put, and which have been answered in a variety of ways. If, for example, the question discussed with so great analytical accuracy by Zinn, be again proposed, Whether the movable iris really arise from the choroid or not—"Num iris ad motum aptissima propago vera choroidis dici possit?" we may reply, that, in fishes, a prolongation of the choroid nearly constitutes the iris, and that in these, therefore, this membrane may be justly called "choroidis propago vera." But it is not so in mammiferous animals, or rather only so in part; that is, the internal tunick is really a mere prolongation of the choroid or ciliary body; but I have shewn that the middle layer, (that of the aqueous humor not included) which, in all probability, constitutes the true iris, is not a prolongation of the choroid, though intimately connected with it: that it is an additional membrane, calculated for motion; provided with nerves, which the choroid has not, and bloodvessels, and a fibrous structure, which, though not sensibly muscular, may be deemed as a modification of that elementary fibre.

Again, if it be asked, is the base of the iris inserted into the anterior edge of the annulus albus, *in the manner* represented in the celebrated diagram of Sœmmering? I am compelled to state, that I do not imagine this to be in every point correct.* I have already dwelt at so great length on the mode in which they are connected together, directly by means of the *loose cellular tissue*, and indirectly through the medium of the ciliary body, or choroid membrane, that it seems to me to be quite unnecessary to return to it. It is to be remarked, however, that I admit the middle layer of the iris to be inserted into the annulus albus, in certain mammiferous animals, as the deer, but this union appears to me unimportant, compared with the more extensive one, the iris has with the annulus through the intermedium of the ciliary body.

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* It is to be observed, however, that even in the diagram, the connection of the iris with the ciliary body is rather more direct than with the annulus albus.

Of the Mode of Union between the exterior coloured investing Tunicks of the Eye, and the internal colourless ones, with the contained humors.

I have, in my former paper on the eye, described at great length the anatomy of the internal ciliary processes. It is by their means that the humors, and more particularly the lens, are attached, and firmly united to the ciliary body, and consequently to the sclerotick and iris. But I cannot assign this union to any precise point, for the very obvious reason, that they are not united by a single point, but throughout at least one half the actual length of these colourless processes. If it be asked, and the question has been often put to me, What precise relation does this union hold with regard to the annulus albus and iris? we may reply, That it seems to vary with regard to the former, but not as regards the latter. When I pass a very fine and sharp instrument through the ciliary body, immediately anterior to the union in question, it passes into the loose cellular texture, situated at the base of the iris, and anterior to the annulus albus. This shews that the greater part of the union corresponds with the annulus albus; so that should this be proved to possess the powers of motion, as I have endeavoured to shew in my former paper, its immediate effect over the capsule of the lens, and its contents, and over the anterior part of the vitreous humor, must be very considerable. But in the eyes of some quadrupeds this is not the case, and the annulus albus is placed more posteriorly than the insertion of the colourless ciliary processes into the coloured ones, which, it is to be remembered, is the only mode of union betwixt the capsule of the lens and the choroid.

I am not prepared to say what the *precise effects* of a contraction or dilatation of the annulus albus over the lens, and its capsule, may be, but I am quite sure that it can neither draw it directly backwards nor forwards; and I rather think that such ideas of the physiology of those parts must have originated, and been maintained, by those unaccustomed to the actual examination of the objects themselves: they appear to me exceedingly coarse. It might be conjectured, that if the annulus albus really possess muscular powers, or a function analogous to such, its close and immediate union with the ciliary body, which is itself a portion of the choroid membrane, might enable it to modify the general form of the vitreous humor, even to lengthen it, and thus give rise to a certain degree of forward motion to the lens, during certain states of the eye; but numerous objections could be offered to this opinion, drawn more particularly from the anatomy of the iris and annulus albus in birds, which I shall now endeavour briefly to describe.

The most remarkable differences I have found to exist between the anatomy of the eye of birds, with a reference to the subject of the essay, and of mammiferous animals, are as follows:—

1*st*, In many birds, *the membrane of the aqueous humor* can be traced directly from the cornea upon the iris, and it imparts to this latter membrane a certain degree of elasticity, causing it, after death, to approach the inner surface of the cornea, and to change its angle with that body.

2*d*, The *attachment of the iris* at its base to the cornea and the annulus albus, is by a comparatively very broad and thin delicate membrane, totally different from the texture of the true iris, in this respect resembling the eyes of man and of the quadrumana.

3*d*, *A delicate dark coloured membrane* distinctly covers the posterior surface of the iris, inclosing in its texture the pigmentum nigrum, which has been generally supposed to be a new fluid pigment.

4*th*, Where the choroid begins to form the ciliary body, it divides into two distinct layers, or rather it receives a layer of a peculiar nature from the sclerotick; and, at this point, it is loosely attached to the sclerotick itself. Somewhat more anteriorly, or about midway between the anterior and posterior terminating edges of the ciliary body, the choroid divides into two distinct layers; the internal one, after forming the ciliary processes, is found to be continuous with the iris, and to form a portion of its thickness. I have examined this continuous portion of the choroid, or its anterior layer, that forms, as it were, the basis for the ciliary processes, with the view of determining if any layer of that peculiar substance which the choroid received from the sclerotick, accompanies the membrane as far as the iris. I cannot say that I have altogether satisfied myself on this point. It has always appeared to me that a very thin layer covers the outer surface of the ciliary body, and proceeds to the base of the iris itself; but it differs somewhat, in apparent structure, from the external prolongation of the choroid, which I shall now describe under the name of *annulus albus*.

5*th*, The external layer detached from the choroid, and which

is, in fact, the annulus albus, proceeds forward, quite detached from the inner one, and having interposed a cavity passing all round the eye-ball. In it are imbedded the great ciliary nerves; the annulus albus terminates anteriorly, or at least is most intimately united with the internal part of the cornea.

These differences in structure are remarkable; they shew that the existing physiological speculations relative to vision can scarcely be accurate, because important anatomical differences have not been taken into account. It were tedious to enter into farther minute details, relative to the anatomy of the eye in birds; more particularly, as I have taken care to lay before the Royal Society of Edinburgh a series of drawings, explanatory of most of the anatomical facts I have observed on this subject. The preparations from which these drawings were made, are now in my possession, and shew, amongst other peculiarities in structure, to which the physiologist ought to attend in his speculations on the subject of vision, that the annulus albus assumes, in birds, a very peculiar form, and resembles somewhat a comparatively broad flat muscle, having numerous nerves imbedded in it; that it is very much detached from the choroid coat; and that, from its intimate connection with the cornea, it must powerfully affect the inner surface of that membrane, in the event of its being actually muscular; that it has no immediate relation to the iris, but through the medium of a loose cellular texture, by which they are united together; *and it is always to be remembered, that the annulus albus in birds can scarcely exert any influence over the lens.*

Were we now to institute a comparison of the structure of the eye in those two classes of animals, viz. birds and the mammalia, we should probably find that a number of the apparent differences in structure depend simply on the high exaggeration of some of the textures in the former, consistent with their astonishing powers of vision; but such a comparison of the existing analogies seems to me to belong more properly to a strictly physiological paper.

The following results, therefore, are to be considered rather as an outline of a subject which would require a much more careful and extended analysis.

First, It is evident that whatever theory we adopt of the accommodation of the eye to various distances, which takes not into account the annulus albus, must be imperfect in this respect, that it leaves unexplained the presence of an organ having a peculiar structure, possessing nerves and bloodvessels, resembling the iris in texture, and having a remarkable constancy. Were the annulus albus merely a ligament for the suspension of the humors, and the connecting link between the coloured and colourless tunicks of the eye, no good reason can be shewn why it should nearly disappear, or, at least, why it should become quite rudimentary in fishes; for surely the humors of their eyes require as much support as those of the mammalia. With it the true or movable iris has also disappeared in the eyes of these animals, not because there existed between them any necessary dependence, but because their common function, viz. the adaptation of the eye to various distances, is no longer required, and the nerves and irritable fibres disappear together.

2d, Granting the annulus albus to possess an irritable fibre, it results, from its anatomical distribution, that it can never, under any circumstances whatever, *directly* pull the lens backward or forward, but that it may greatly influence the form of the vitreous humor, and the position of the lens, from the nature of its connection with the choroid tunick, and ciliary body; and, through their medium, in the capsule of the lens, the lens itself, and vitreous humor. This seems to have been the opinion of Briggs, with which Morgagni, in a great measure, coincided.

3d, This explanation will not apply to the eyes of birds, because the anatomical distribution of the parts is different; if in them the annulus albus be irritable, which, judging by its appearance, we cannot well doubt, its influence in affecting the form of the vitreous humor must be trifling, but it may strongly modify the form of the inner surface of the cornea. *4th*, The objections to the hypothesis of Jurine, as applied to man, the quadrumana, and to birds, are anatomical, and therefore conclusive. He fancied, if my memory be correct, that the iris, during the contraction of the pupil, altered mechanically the inner surface of the cornea; but the connecting membrane is exceedingly delicate, extensible and elastick, and cannot possibly affect or alter any tissue so firm as the cornea, during the actions of the iris; it is evidently placed there to enable the latter to perform the extensive motions required of it. But it is not so with other animals, as the *ruminantia*, for example, in which, from the strength of the point of union between the iris and cornea, at the *annulus niger of Zinn*, it is quite possible that a strong contraction of the pupil might affect the internal membrane of the cornea.

5th, The choroid portion of the iris in man, in the quadrumana, and in birds, is reduced to a mere delicate membrane, whereas in most of the mammalia it is of considerable thickness, and in fishes constitutes nearly the whole of their iris. Hence, this body is much more extensively movable in man, in the quadrumana and in birds, than in most other animals; because the ciliary body does not advance upon the iris so much in the former as in the latter. This freedom and extent of motion in the iris, seem to be in the direct ratio of the range of vision, or at least of the accommodating powers of the eye. The highly elastick nature of the membrane connecting the base of the iris to the more fixed investing tunics,—the anatomical distribution and elasticity of the annulus albus,—the perceptible alteration occasioned in the form of the vitreous humor,—the degree of tension of the choroid, greater or lesser, and the consequent alteration in the situation of the capsule of the lens, and its contained humors, whenever the iris is drawn mechanically forward, so as to imitate the action by which the pupil is contracted; lastly, the continuity of the ciliary body, and iris, seem to demonstrate, that the iris, agreeably to the hypothesis of Dr Brewster, may be the chief agent in effecting those necessary changes in the interior of the eye-ball, on the occasion of every change in its focal distance.

But when we attempt to apply this theory to all the phenomena which are known to be connected with the accommodating powers of the eye; when we endeavour to explain the whole of the phenomena, by means of the iris alone, then certain objections present themselves, which may be considered with a reference to structure, and to function.

Allowing the iris its powers of motion which we know it possesses, and that in consequence of its convex form, a fact first insisted on by Dr Brewster, and which seems to have escaped the observation of the greater number of anatomists, it is enabled at every contraction to alter the form of the vitreous humor, to draw the choroid and the capsule of the lens forward with it, it by no means follows that the lens itself should obey this impulse, and be removed thereby farther from the retina. We should expect rather the reverse of this, and that the capsule of the lens being compressed anteriorly, the lens itself should be pushed towards the vitreous humor or nearer the retina, and thus the eye become adapted for the perception of objects placed at short distances. I admit, however, the great difficulty of deciding positively on the nature of these actions, because, by the contraction of the pupil, the whole interior of the eye-ball may be elongated, and the lens be thus altered, in respect to its distance from the sensitive membrane. As yet we have spoken only of the contraction of the pupil, but every one knows, that, when we regard remote objects, the pupil dilates nearly in the ratio of the distance of the object, and perhaps its degree of illumination. Now, it is impossible to imagine in what way the dilatation of the pupil can effect any alteration in the position of the crystalline humor. Could we suppose the eye to be fitted in its ordinary state for the perception of objects placed at considerable distances, then we might imagine that the only really active state is that which adjusts to short distances, and, consequently, the whole of the phenomena might be explained by the action of the iris alone, combined with the high degree of elasticity possessed by the annulus albus; which elasticity would enable that body to restore the choroid tunic, and, consequently, the vitreous humor, to its original form, as soon as the action of the iris had ceased. The changes described may be readily enough imitated in the eye, though removed from the body, so that a part at least of the explanation rests on simple anatomical facts, which cannot be set aside. But the original supposition is hypothetical, and apparently contradicted by common observation.

The accommodating powers of the eye are not destroyed by the action of belladonna, which paralyses the iris to a greater or less degree. During its action, the eye becomes rather unfit for the perception of very near objects. I have made this remark in my former paper on the comparative anatomy of the eye, and drawn the obvious inference.

When we look at objects placed very remote from us, the pupil suddenly dilates, and if we now regard any distant object with great attention, a contraction of the pupil takes place. This contraction is of course determined by the distance of the object, its degree of illumination, and the colour of the iris. But does this attempt to contract the pupil occasion the intolerable sensation of fatigue which we feel in the eye, when our attention has been directed for a considerable time on any very distant object? I think not; and am therefore inclined to attribute it to some action going on in the interior of the eye-ball, independent of the iris, by which the eye is accommodated to distant perception.

I feel assured that many interesting anatomical facts still remain to be discovered in the comparative anatomy of the eye, and that the inquiry is by no means exhausted; for we must not infer, because anatomists have scarcely been able to add a single important fact to the descriptive anatomy of the human body, since the completion of the labours of Haller and Albinus, that the field of anatomical inquiry is therefore finally closed. The result of my inquiry into the structure of the eye of the chameleon *, which led me to discover the presence of the foramen of Sœmmering in the retina of that very singular animal, and which set aside for ever several clumsy hypotheses, which took for granted as their basis, that a structure common to man and many reptiles was peculiar to man alone,—this first inquiry, I repeat, may be offered as an ample refutation of such opinions.

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* Trans. Wern. Soc. vol. v. p. 104.

Explanation of Plate II.

Fig. 1. A portion of the eye-ball of the deer viewed internally.

a, The inner surface of the cornea.

b, The surface of the iris next the cornea.

c, The annulus albus, seen through the *choroid tunic*, which along this whole line is semitransparent.

d, The sclerotic.

e, The insertion of the annulus albus into the sclerotic.

f, The cut extremity of the triangular space interposed between the anterior surface of the annulus albus, the base of the iris, and the insertion of the latter into the cornea by the line called *annulus niger*. This space is filled, in the eye of mammiferous animals, with a loose, dark-coloured cellular membrane. It is sometimes very small, but probably always exists.

g, Marks the wedge-like termination of the annulus albus posteriorly inclosed between the layers of the choroid. In the drawing, the choroid has been pulled a little aside from the sclerotic, to exhibit these parts more distinctly.

h, The internal aspect of the ciliary body.

i, The same view of the choroid tunic.

Fig. 2. In this figure, drawn from the same preparation, the iris has been laid down upon the cornea, by which trifling change several important parts are brought under view. The letters *a*, *c*, *d*, *e*, *f*, *g*, *h*, and *i*, have the same reference as in Fig. 1.; but in Fig. 2.

b, Marks the inner aspect of the iris instead of the outer.

k, The floating extremity of the ciliary processes, which hang loose in the posterior chamber of the aqueous humor, immediately behind the iris.

This figure is constantly referred to in the "Memoir on the base of the Iris." It demonstrates, that, in certain animals, the anterior and posterior surfaces of the iris are not of equal length. It shews the advance of the ciliary body and processes upon the iris, and that the union of the internal ciliary processes with the external (which takes place along the line immediately posterior to the point marked by the letter *k*), is anterior to the insertion of the annulus albus into the sclerotic.

Both figures shew that the iris, if it must be considered as the continuation of any other body, belongs rather to the choroid than to the annulus albus; but the bare inspection of the cut edge of the iris in any of the mammalia, shews, that, in addition to the layer it receives from the choroid, there is another stronger one, of a fibrous appearance, altogether different, and evidently inserted into the annulus albus at the point where the choroid quits it. This insertion, however, is sufficiently distinct, and admits not of doubt, though the membrane, before it reaches the annulus, has become thinner, and even altered somewhat in appearance. It was found impossible to represent these particularly in the drawings. The only difficulty, then, which exists in deciding on the actual relation of the base of the iris to the annulus albus, arises out of the application of these anatomical facts in the eye of the deer to the structure of that of man, which, however analogous it may be, does yet differ in many essential particulars as to form, relation, position, &c. Some of them have been already pointed out in the memoir quoted; such, for example, as the correspondence of the anterior and posterior surfaces of the iris, &c.; but, as in the other mammalia, their surfaces do not strictly correspond, some might deny that the prolongation of the membranes outwards, and somewhat backwards, to join the annulus albus, is really a portion of the iris. Judging from the preparations now in my possession, and the very frequent examinations I have made of this anatomical point, I am inclined to think that a considerable portion of the whole thickness of the base of the iris, and more particularly the peculiar yellowish fibrous membrane entering into its composition, is actually inserted into the annulus albus; the more internal or posterior layer or layers being a prolongation of the choroid, and the anterior uniting with the cornea, and partly with the loose cellular membrane lying anteriorly to the annulus albus.

The distance between the insertion of the fibrous layer of the iris into the annulus albus, and that portion of the iris which we may consider as the only moving portion, is in the deer considerable. Hence these bodies, the iris mainly, and the annulus albus, cannot much influence each other, at least directly. But there is no reason for thinking that any such space exists in the eye of man, there being neither in him, nor in birds, properly speaking, any portion of the iris which may be regarded as immovable; in other words, the termination of the anterior and posterior surfaces of the iris correspond, and the ciliary body does not advance forward upon the iris.

Fig. 3. As birds possess in a remarkable and eminent degree the power of adapting the eye to various distances, as they see equally well at short and at great distances, and as they seem to enjoy all the functions of the eye in great perfection, we have a right to infer, that, in the examination of their eyes, there would be found a maximum of development of all those structures connected with this superiority in vision. Now, such seems to me to be the case; but I shall not in this place enter into a comparison of their structure, which would lead me much beyond my prescribed limits.

I am disposed to think, that several anatomists have given the name of Annulus albus to the portion of the sclerotic, which, in the eyes of birds, is found to pass forward on the inner surface of the osseous plates, on its way to join the cornea. This seems to me a great error. The annulus albus is indeed fixed into this portion of the sclerotic by a very broad basis, but yet is sufficiently distinct. Its very peculiar relations are represented in the following figure.

a, The internal aspect of the cornea.

b, The iris hanging loose, and having an irregular appearance. It is connected at *c* to the annulus albus, by a comparatively broad and very delicate membrane, of a dark brown colour, and apparently composed of cellular tissue. The interposition of this membrane between the iris and annulus albus in birds, shews how little they are connected to each other, and how independent their action must be. It demonstrates, moreover, that in these animals the iris receives no layer from the annulus albus, and is, as it were, only loosely suspended to it at nearly right angles.

c, The ciliary body; which, after forming the ciliary processes, runs into the iris, and is indeed quite continuous with it; but here also the texture and thickness of the iris demonstrate, that it is not altogether formed by a continuation of the choroid, though it receives no layer from the annulus albus.

d, The osseous plates, which in many birds are hollow internally.

e, Their anterior termination; the sclerotic here reappears at its usual texture.

f, The choroid forming the commencement of the ciliary body. An incision has been made through the ciliary body, at about an equal distance from its anterior and posterior terminating edges, in order to display the inner surface of the annulus albus (marked *g*), and the numerous nerves which ramify throughout its substance.

h, The union of the anterior portion of the annulus albus with the cornea.

i, Its union with the ciliary body, and choroid.

k, Principal point of union with the sclerotic.

From the readiness with which the iris, in man, may be separated at its base, I am inclined to think that its union with the annulus albus is of the same nature as is found in birds; that is, extremely loose, of a cellular structure, and easily lacerated. It would seem, also, that the form of the annulus albus, its broad insertion into the sclerotic, its union anteriorly with the cornea, approximate this part of the eye of man most nearly to that of birds; but I have not been able to verify these points in the eyeball of man so fully as I could have wished.

Texture of the Liver. Note from Prof. CRUVEILHIER's Lectures. Bulletin des Sciences Medicales, Jan. 1826.

M. CRUVEILHIER having injected the different bloodvessels, and excretory ducts of the liver, with fluids, each of a distinct colour, finds upon a minute examination of the internal structure of that viscus, 1, That each of the granulations, or *acini*, of which it appears to be composed, are surrounded by a dense scelular tissue, whiter than that of the granulation itself. 2, That the ramifications of the hepatic artery, are ultimately distributed upon that dense cellular envelope. 3, That those of the *vena portae* embrace the granulation. itself within. 4, That the origins of the *venae cavae hepaticae*, and also the origins of the *pori biliferi*, or excretory ducts, are within the acini.—We hope this important discovery will be confirmed by other anatomists.

V. PHYSIOLOGY.

Case of Uterine Hemorrhage, in which transfusion of Blood was successfully employed. By WILLIAM BRIGHAM, Member of the Royal College of Surgeons of London, and Surgeon to the Lock Hospital, Manchester.

[The cultivation of Physiology first introduced the practice of transfusion of blood for the cure of disease, during the prevalence of a false theory of morbid action, which attributed every thing to the corruption of the fluids. This error has died away, and physiology has again revived transfusion in those cases of hemorrhagy, which, without a supply of the vital fluid, must necessarily prove fatal. It was, we remember, strongly recommended for this purpose by the late Dr John Gordon, in his admirable lectures on physiology, and afterwards more fully by his pupil, Dr J. Leacock, in his thesis De Hemorrhagia, published at Edinburgh in the August of the year 1816. In this dissertation, Dr Leacock has described many experiments, in some of which he was assisted by Dr Gordon, these having been instituted, as he tells us, p. 12, entirely to ascertain how far transfusion might be useful in collapse from hemorrhage; and that the uterine hemorrhages of the puerperal state were also included in this object, appears by the following sentence, the last in his essay. "Quando autem haec (alia remedia) parum prosunt, nempe ubi mulier parturiens in ipso mortis limine tremiscit; aut ubi miles, prae jactura sanguinis exitium imminere videt, quod quaeso argumentum afferri potest, quo minus ad hanc ultimam spem nosmet recipiamus, atque animam jam corpus relicturam revocare tentemus?" Dr Blundell has since made the happy application of this suggestion to practice, and another of our friends has favoured us with a report of a still later proof of its utility, as below. A successful case by Mr Waller, may be seen in the last number of the London Medical and Physical Journal, June 1826.—Ed.]

On the 8th of May I attended Mrs Robinson, who was in labour of her eighth child. She is 40 years of age, and of a delicate habit. The labour was easy and natural, and she was delivered about 11 o'clock in the forenoon of a fine healthy male infant. The placenta was expelled in a quarter of an hour afterwards, without any interference being required, and without any hemorrhage following.

There was nothing worthy of remark in the course of the delivery, except that the patient appeared more dull and heavy than was her usual manner, and that she did not make those anxious inquiries respecting the progress or termination of her labour, which females in such situations are generally accustomed to express. I believe she did not speak to me during the whole of my stay, yet I left her about noon composed and easy.

About 2 in the afternoon, however, the patient complained of violent pain in the back, expressed a wish to get out of bed, and was slightly convulsed. This was followed by sudden and most alarming hemorrhage, which must have partially continued for some hours; for, being engaged in the country, I was not able to visit her until 6 p. m. I then found her perfectly senseless, her face sunk, pale and exhausted, her expression particularly anxious, the extremities quite cold, the whole surface of the body damp and deprived of warmth, and the pulse but just perceptible. The flooding at this period had entirely ceased.

I immediately took the usual means to restore her. She was actively treated, being forced to swallow at short intervals considerable quantities of light nourishment, warm milk, brandy, and stimulating draughts, along with carbonate of ammonia, while warmth was applied to the extremities, &c. &c. But, although all the means were employed in succession, which are generally resorted to on these alarming occasions, there was not the least benefit apparent, nor the slightest sign of returning animation. At the termination of an hour after these remedies, she appeared sinking; she continued insensible, and unable to utter a word; her breathing was short and hurried; her skin cold and damp; her face deadly pale and sunk; there was a constant and unwearied jactitation of the limbs; her pulse at the wrist was, at this period, quite imperceptible, and life appeared to be ebbing fast away.

I was now anxious, as the only means of saving my patient, to try the operation of transfusion, as it has been lately revived and recommended; and, on communicating my intentions to my valued friend Mr Jordan, who resided near the place where I was engaged, he, with his usual zeal and kindness, instantly accompanied me, along with Dr Hibbert, who was at the time at my friend's house, and Mr Blundstone. To these gentlemen I ought to express my acknowledgments, not only for the interest they shewed for the success of the case, and the advantage of their opinion on the great propriety of the experiment, but for their valuable assistance during the operation. The proposed plan of treatment was consented to by the husband and relatives with a submission and confidence which on this anxious occasion were truly gratifying; and as the poor woman, who continued quite unconscious to all our proceedings, grew rapidly worse after our return, the operation was immediately commenced.

The syringe employed (a very inconvenient one for the purpose) holds about two ounces. On injecting the first syringeful, and after a short interval the second, no change was evident either on the pulse or otherwise; but after the third charge had been thrown in, the pulse in a few minutes was certainly affected, and an alteration was observed in the countenance and general appearance. The process was continued, with intervals of ten and twenty minutes, until ten or twelve ounces of blood had been injected.

It was now apparent to every one present that a decided improvement had taken place in the state of the patient. She appeared revived, the breathing was much less oppressed, the pulse was becoming distinct, though still very quick and tremulous, and she was able to speak, which she had not done for six hours before.

Although this state of my patient was very satisfactory, and made a strong impression on my mind of the value of the remedy; yet, from the alarming hemorrhage, and the excessive exhaustion which had taken place previous to the operation, as well as the slow advance towards a state of safety, I entertained but slight hopes of ultimate success, particularly when her situation at this period was compared with the remarkable cases lately recorded. I left her, however, at 12 o'clock P. M. certainly much improved, and with the conviction in my mind, that, if the operation of transfusion had not been employed, she would ere this have sunk beyond all human aid.

It may here be proper to notice rather a singular phenomenon which was repeatedly remarked after the first four ounces of blood had been thrown in. It may probably excite some interesting inquiries.

Immediately after each syringeful of blood was injected, the pulse, feeble as it was, appeared to faulter still more, and become rather more oppressed; at least it was quite clear that it was not raised, nor had become firmer in its beat: but, after a lapse of five or ten minutes, it recovered its beat, became more firm, and evidently demonstrated the effect of the injection on the general circulation.

On visiting Mrs R. at 8 the following morning, I found her in a promising state: she was in a composed sleep, having been so since 4 in the morning. Her skin was warm, her face slightly flushed, and the pulse 120. She had taken freely of nourishment, had expressed herself to be easy, and had called for some warm gruel. There was a very slight oozing from the uterus.

It will not be necessary to follow the progress of this case through a tedious detail of daily visits; for which reason I shall confine myself to a few points. Before entering on these, it is sufficient to state, that the patient gradually recovered, and that the symptoms observed, with the exception of some which I am about to describe, were such as generally follow dangerous hemorrhage. The consequences of these, particularly when occurring in the puerperal state, must at all times require on the part of the medical attendant great care and attention. In short, Mrs R. was kept perfectly tranquil, carefully dieted, her bowels, &c. duly regulated, and in three weeks she was sufficiently recovered to leave her room.

I shall now advert to the more important circumstances of the case.

From the regular progress of Mrs R.'s labour, the favourable contraction of the uterus, and the natural and easy expulsion of the placenta, I was certainly rather surprised at being summoned to attend her in so dangerous a state of flooding. But I think it may be pretty clearly ascertained, that some previous derangement of her general health had preceded the labour, and that the convulsion which occurred, with the subsequent hemorrhage, strongly indicated some disturbed action of the brain, with probably a state of effusion. I was confirmed in this opinion by observing a partial paralysis of one side of the face, which became evident as soon as the patient recovered sufficiently to speak. The same affection likewise occurred on one side of the throat, though in a slight degree, so as to impede the process of deglutition. These symptoms of paralysis have been gradually subsiding, and I have reason to expect they will become daily less apparent.

I shall next observe, that, during the operation, in consequence of some little obstruction to the process occurring in the vein first opened, it was necessary to open a vein in the second arm. In both arms, immediately above the place where the veins were punctured, considerable inflammation arose. But by soothing applications, warm evaporating lotions, &c. the tension and swelling in the left arm subsided in a few days. The inflammation in the right arm, however, ran very high, and a small abscess formed at the bend of it, which was allowed to open spontaneously, and was very soon healed.

I ought to make a few remarks here on the mode of performing the operation of transfusion, which, though so exceedingly simple, stands in need of much improvement. In laying bare the vein at the bend of the arm, for the purpose of introducing the pipe of the syringe, I would, in any other case of the same kind, certainly act differently. After having carefully divided the skin, and exposed the vein (allowing it even to bulge through the skin and integument), I would compress it firmly by the fingers of an assistant, both above and below the point intended to be punctured. I would then open the vein, pass a small probe at each extremity, and introduce the pipe of the syringe (which should be made of very fine elastic gum) into the opening of the vein, before the fingers of my assistant employed in compressing it were removed.

By following this or a similar plan, the only difficulty in the operation would be removed; for if this caution be not observed, immediately upon the vein being opened the blood flows over the parts (and in these cases we have not a drop of blood to lose), so as to obscure the opening into the vein, and render the introduction of the pipe of the syringe difficult and uncertain.

This plan would entirely obviate the difficulty stated, and render the further steps of the operation simple and satisfactory.

Since writing the above, I have received the elastic tubes, &c. invented by Mr John Read, which he has very accurately adapted to the stomach-syringe. I am much pleased with the invention, and think them very likely to afford great facility and nicety in the operation.

VI. MATERIA MEDICA.

Of the action of Codiate of Morphia, upon the animal economy; a series of experiments by MM. ORFILA, and OLIVIER of Angers.—From the Journal de Chimie Medicale, Oct. 1825.

INJECTION into the Veins.—A grain of codiate of morphia, dissolved in a small quantity of water, being injected into the jugular vein of a little dog, the animal uttered some lamentable cries, during the injection, and fell presently into a sort of somnolency, which disappeared gradually after some hours. Two grains dissolved in distilled water, injected into the jugular vein of a large sized and pretty strong dog, besides occasioning some cries during the act of injection, soon reduced the animal to a quiet state, and thence to sleepiness, in which he remained about three hours: the narcotism went off insensibly. Next day, at nine in the morning, three grains of the codiate of morphia were introduced into the opposite jugular vein of the same dog. The animal immediately uttered long groans; in three minutes after, he was quiet; he walked about, but unsteadily; then lay down on his side, and quietly fell asleep.

He remained in this state till two in the afternoon, when he began to utter some weak cries; his hind legs seemed a little weakened; all the symptoms vanished in the evening. Two days after this experiment, six grains of codiate of morphia, dissolved in distilled water, were injected into the jugular vein of a small dog. The animal groaned loudly during the injection, and struggled; but after some minutes, he was suddenly affected with sopor, which gradually became deeper, and continued without change for two full hours; the smallest noise, however, was sufficient to rouse him for an instant. The animal, on being forced to rise, walked with difficulty, his respiration was quiet and equal; the drowsiness and quiet continued till the evening. Next day all the phenomena had disappeared.

Introduction of the codiate of morphia into the cellular tissue. Twelve grains of this salt, dissolved in distilled water, introduced into the cellular tissue of the thigh of a dog of small size, produced, a few minutes after the operation, vertigo, somnolency, and staggering, like that of a drunken man. The hind legs did not, in this experiment, seem more paralysed than the fore legs. The animal made no noise; the slightest sound roused him from his sleep; his respiration was natural. He sometimes spontaneously quitted this state, made some attempts to rise, and remained lying along on his belly, as if he could not overcome the drowsiness which oppressed him. These symptoms continued to decline gradually during the day, and the next day the animal had returned to his natural state. On the following day, at nine in the morning, MM. Orfila and Olivier introduced eighteen grains of the codiate of morphia into the thigh of a small dog. He seemed to feel no sensible effect for eight minutes; but at the end of this time he shewed a slight degree of sopor, a slight lassitude also in the hind legs, which, at intervals, seemed to increase; the smallest noise made him open his eyes, and produced a movement analogous to that of a person suddenly awakened. The continual drowsiness, which the animal could not overcome, was nevertheless interrupted from time to time by a sudden elevation of the head, like that of a man who falls asleep on his feet, and who, suddenly and mechanically, raises his head, at the instant in which it is drawn forward by its own weight. The respiration was regular, the feebleness of the posterior extremities augmented by degrees; the animal was nevertheless quiet, and gave no signs of pain. Sometimes he rose of his own accord, and if he walked some steps, he tottered, and dragged his hind legs; his appearance indicated disquietude, and he soon sunk again under the pressure of narcotism. In this state his eyes were not entirely closed. In the evening the paralytick symptoms were diminished, and next day the functions resumed their usual regularity.

On the 18th of July 1825, at nine in the morning, MM. Orfila and Olivier introduced about thirty-six grains of the codiate of morphia into the cellular tissue of the thigh of a small dog. The first phenomena of narcotism took place at the end of five minutes; slowness in the motions of respiration, general calm and tranquillity followed, as in the preceding cases. The animal suffered vertigo, in walking, and the eyes being exposed to a strong light, the pupils became much contracted. At half past ten, things were in the same state, except that the sopor seemed more profound; it could, however, be interrupted easily and suddenly, by the slightest noise. At noon, the progressive weakness of the limbs was much less distinct than before this period, notwithstanding that vertigo was still present.

At one o'clock no change; the animal lay along upon the side. Examined for some moments in this position, although the sopor continued, slight convulsive spasms were observed, which frequently and suddenly agitate one or more limbs, sometimes the head only, at other times the whole trunk. These convulsive contractions continued all the day, then became less frequent, and ceased during the night. Next day, the narcotism was still severe; but no spontaneous movement disturbed the quiet of the animal. Being forced to rise, it moved unsteadily; the vertigo was but slight, which, with the other phenomena, disappeared gradually in the following days. On the 20th of July, at twelve minutes past eight in the morning, the experimentalists injected a solution of forty-five grains of the codiate of morphia into the cellular tissue of the thigh of a small bitch. In two minutes, the animal lay down on its side, agitations were observed in the trunk, analogous to those produced by sobbing, and in some instants these became stronger. The posterior extremities seemed paralysed; the animal endeavoured in vain to rise. In this experiment that quiet state remarked in the preceding cases was not seen; the pupils were strongly contracted; the body was at frequent intervals raised by convulsive starts. The animal was un-quiet, tried to walk, but failed. It then rose spontaneously, turned round, and fell down; the general agitation was constant, and became more intense. At half past eight, the convulsive movements were stronger, and more frequent; the animal very well distinguished the noise around it, the pupils were less contracted; it appeared to recognise surrounding objects; it did not groan; the respiration was accelerated, and although it could not at all use the hind legs to rise, or walk, it several times made use of the hind foot to scratch its head. At nine o'clock the animal uttered some cries; the agitation, and other symptoms continued in the same degree, except that the convulsive motions, having become so strong as to raise the whole trunk, destroyed the life of the animal at half past ten, two hours and eighteen minutes after the introduction of the codiate of morphia into the cellular tissue of the thigh. Death immediately followed a violent convulsion, that made the body of the animal spring some steps from the spot where it lay. In the dissection made almost immediately after death, no sign of inflammation or sanguineous congestion was found in the brain, or its membranes, nor even in those of the intestinal tube. The lungs were crepitating, contained only a small quantity of blood; the cavity of the heart, however, and the large arterial and venous trunks, were distended with black and coagulated blood. "We will confine ourselves," say the above mentioned experimentalists, "to the simple exposition of these facts, in order to allow physiologists and physicians to draw from them theoretical or practical inductions. We will merely observe, that, comparing the results of our experiments with those obtained from the use of the acetate of morphia in equal doses, it turns out that the codiate of morphia, in high doses, has produced all the phenomena presented in animals poisoned by the acetate. By the examination of the symptoms, however, which have taken place under the use of the codiate of morphia in small doses, would we not be led to suspect that this natural salt may possess a property somewhat more sedative than the other preparations of opium? Let us wait until the trial of this new medicine on man clear up so important a question."

On the external and internal Use of Chloride of Lime. In a Letter from Dr Cima of Bergamo to Prof. G. Brugnatelli. *Giornale de Configliachi e Brugnatelli, June* 1825, p. 188.

I have employed the chloride of lime, both in the concrete and liquid form, internally and externally. In every case of scrofulous tumour of the neck or groin, or in tumours of the hands or feet, which resisted the mercurial plasters employed by other physicians from their very commencement, and persisting long without seeming to yield to the internal remedies boasted in such affections, I prepared an ointment, of from a scruple to a dram of concrete chloride of lime, to an ounce of pure axunge. Upon each application the tumours became red, and communicated to the patient an uneasy itching sensation, which compelled him to touch them. In the progress of time they became soft, and afterwards decreased in volume. In several cases I ascertained, that the chloride of lime in the above dose of a dram, induced in tumours inclined to suppurate, a more considerable redness, softened the surrounding induration, and promoted the process. From these facts, often observed, I have been led to think that the chloride irritates and stimulates the system of the obstructed glands, and, by increasing the activity of their lymphaticks, favours their resolution, and the transit of the serous fluids, which have stagnated around them.

From these inductions, which to me seem demonstrated truths; and from perceiving in the action of chloride of lime applied externally, a specifick power tending to support and to correct the atony and weakness of the lymphatick system; and to give motion to the inert vessels, by eliminating the acrimony ingendered within them, which impairments most commonly form the proximate cause of scrofulous diseases; I exhibited the chloride of lime internally also, in the dose of a scruple to a dram in six ounces, or a pound of distilled water. But it was administered *pure*, or at most with the addition of simple syrup, to improve the taste. Two or three small spoonfuls were taken every two or three hours. The immediate effect was, that the glandular enlargements were diminished, and that slight pains in the lower belly, and symptoms of pyrosis, were produced. The same influence operated upon the surface of the internal canal, and determined some dejections. After about a month, it sufficiently appeared that the lymphatick system in general was reinstated in its functions. I did not fail to employ clysters, when purging was necessary; but I was unwilling to exhibit purgatives by the mouth, lest they should interrupt the action of the remedy, and confound it with their own effects. A nutritious diet, of easy digestion, was advised in all the cases.

I must confess, that at the first use of the chloride of lime in the animal economy, and in particular its specifick action upon the *conglobate* or lymphatick glands, on account of which I prescribe it with advantage in that system, I apprehended pernicious effects from it upon the healthy *conglomerate* glands; or upon the organs destined to supply the humours necessary to the animal economy; such as I had found to occur from the use of iodine, under every form of that dangerous remedy. But I would not be understood to enhance the value of the chloride of lime at the expence of iodine; and though I know of no fact which proves that chloride of lime is mischievous in that way; yet neither have I found any circumstances which ascertain its innocence.

VII. MEDICAL JURISPRUDENCE.

Cases of Poisoning from Arsenic, with a new and satisfactory Mode of indicating the Poison, even to the Fortieth Part of a Grain, in the Metallick Form. By ROBERT CHRISTISON, M.D., F.R.S.E., Professor of Medical Jurisprudence in the University of Edinburgh.*

I HAVE been long convinced, that the whole attention of the medical jurist should be turned to the improvement of the method of analysis by reduction, or, at least, that the liquid tests should be made, what they ought to have always been, subsidiary merely to the development of the poison in its pure metallic or oxidized state. In pursuance of this object, I published, in a former paper, a process, by which I was satisfied, that so small a quantity as the fourth part of a grain, might be presented in its characteristic metallic form, although it had been dissolved in eight thousand parts of the most complicated vegetable and animal fluids. The same process, I likewise shewed, was applicable to cases in which we are required to detect arsenic in the solid animal tissues, as in the coats of the stomach; and, in general, to all solid mixtures, in which the arsenic has not already formed, or cannot form, during ebullition, in water, an insoluble compound. The fluids, in which I detected it in the quantity mentioned, were port-wine, porter, tea made with abundance of cream and sugar, coffee made in like manner, strong barley-broth, and milk. At that time, an opportunity had not occurred to me of applying the process to the contents and tissues of the human stomach. But the following cases will shew, that it is equally applicable to them also, and that I have by no means overrated its delicacy.

* * * *

Professor Orfila alleges, that the sulphuret of arsenic is not nearly all decomposed by the process of reduction; and he grounds the allegation on a statement made by Roloff himself in his paper; for, from 2½ grains of precipitate, Roloff procured only an eighth of a grain of metal.[*] If Orfila, however, had either made the experiment himself, or read Roloff's paper with care, he would not have ventured a criticism so unworthy of the Professor of Medical Chemistry. Roloff obtained his precipitate by treating adulterated vinegar with sulphuretted hydrogen. This precipitate, therefore, was not pure sulphuret of arsenic, as Orfila assumes, but consisted chiefly of vegetable matter. That all the arsenic contained in it was disengaged by the process of reduction, is satisfactorily proved by Roloff, by the conversion of the sulphuret of another portion into arseniate of potass, and of that into the arseniate of lead. The quantity of arsenic in the sulphurous precipitate, when estimated in that way, agreed almost exactly with the actual quantity procured by sublimation.[†] In point of fact, I have frequently reduced both the pure and the animalysed sulphuret, and never experienced any difficulty in decomposing it almost, if not quite entirely.[‡]

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* From the Edinburgh Medico-Chirurgical Transactions, vol. ii.

CASE I.

T. S. died after somewhat less than two days' illness. His wife had for some time lived on bad terms with him, had been often reprimanded by him, for alleged loose conduct with the crew of a cutter, and, in consequence, had several times threatened to be revenged on him. She did so in particular, the night before he took ill. Two or three days before that, she went to a schoolmaster in the neighbourhood, who practised physic a little, and asked for poison to kill a dog, which, she said, often broke into her house, and ate the meat. As several dogs were known to be living wild in the vicinity, and to have done much mischief among the sheep, he believed her story; and, after offering her nux vomica, which she declined, under the pretext that she had already tried it without success, he gave her half a dram of arsenic, with strict injunctions to take care no person ran any risk of being hurt with it. According to her own account, she never laid it for the dog; indeed, there appears to have been no dog to lay it for; but put it beside two other powders on the edge of a sieve hanging on the kitchen wall. These powders, containing one of them alum, the other alum and cream of tartar, had been given her by the same person for a trifling complaint, and were wrapped up in the same way as the arsenic. After the funeral, suspicions having arisen in the schoolmaster's mind, he inquired about the symptoms that preceded the man's death; and in consequence of what he then learned, he sent his servant to ask the widow to return him the arsenic, if it had not been used. It had not been used for the purpose for which it had been obtained; but she was unable to produce it, and gave very contradictory accounts of the way it had been disposed of. The only other moral circumstance I need mention is, that, within a week after her husband's death, she applied again to the schoolmaster for a potion, "which would produce love in the other sex;" and she confessed, that "she had been courting with a lad," belonging to a smack, before her marriage, and that it was to make him like her better that she asked for the potion.

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[*] Toxicologie Generale, 1st edition, i. 167. The objection is repeated *verbatim* in the second edition, published in 1818.

[†] Jahrbuch, &c. p. 159.

[‡] My friend Dr Turner, Lecturer on Chemistry here, has remarked, that if there is a considerable excess of sulphur, as when the arsenic is thrown down, by the hydrosulphate of ammonia, from a solution containing nitric acid, then the metal is not sublimed at all with the heat of a spirit-lamp. It is not easy to assign a reason for this, unless we suppose that a fixed compound is formed of sulphur, potass, and arsenic. I have verified the fact. Of course, it does not affect the validity of the process with sulphuretted hydrogen.

The medical history of the case is defective in regard to the symptoms. The deceased had been for some time rather in an infirm state of health, particularly after receiving an injury of the head from a fall twelve months before. He was liable to periodical attacks of colic, attended, if the prisoner may be believed, with sickness and vomiting. On a Friday morning he appears to have been slightly unwell, but he went to his usual work as a reaper, and was seen returning home in the evening apparently in good health. On Saturday morning he was decidedly ill, could not take any breakfast, complained of pain in head, breast, and belly, vomited several times, and was very thirsty. In the evening he was seen by a neighbour retching violently, and in great distress. He passed a very bad night. On Sunday morning he was again seen vomiting by the same neighbour; and, according to his mother's statement, he was very low, and so feeble as to be hardly able to speak. Towards three in the afternoon he felt easier. In the evening he said he should rise; and, though his wife tried to dissuade him, he put his legs over the edge of the bed without assistance. Thereupon, she and another woman helped him into a chair, where he had hardly sate down before he dropped his head on his breast, and seemed to faint away; sweat broke out over his face and neck, and he immediately expired. He died about six in the evening; and, therefore, probably of less than thirty-six hours illness. The schoolmaster found, in the course of his inquiries made on account of his suspicions mentioned above, that, besides vomiting and pain of the belly, the man had likewise had a good deal of purging.

The body was buried three days after death, and disinterred for inspection fourteen days after that. The following is the *verbatim* report of the surgeon of K——, who conducted the examination.

(To be continued.)

Note on Provisionary Association among the Members of the Medical Profession. By one of the Editors.

THE mutual support to be derived from friendly associations of this description, which amount to neither more nor less than a reciprocal assurance of health and life, begins to be duly appreciated in the medical world. Already two societies for the purpose have been organized in London: and the very able, and, to us at least, unanswerable pamphlet, of Mr Allison, upon the same subject, has given, as we understand from him, an auspicious commencement to an establishment of the same description among the medical men of Edinburgh and Leith. We had prepared to go into the subject at some length in the present number,—but are prevented by the urgency of other calls that will less bear delay, than a proposition which can only be carried into effect by a simultaneous movement of the whole efficient part of the profession, and which will, therefore, never take place, till most of its members are put in full possession of the advantages fairly to be expected from provisionary union. It seems to us, however, that no form of association is so well adapted for the purpose as that of a common "Insurance Company." The name and structure cuts away every thing eleemosynary in the idea of the scheme, that might otherwise haunt the minds of independent practitioners; though, when we see the high names already added to the subscriptions of the "London Medical, Clerical, and General Life Assurance Society," we do not anticipate many scruples to be made, in Scotland, on this score, however delicate.

However proud, our inventive neighbours of France have anticipated us in a Medical Provisionary Society, by more than twenty years. The "*Societé Medico-Pratique*," of which the chief object is to relieve their members and other medical persons in adversity, was founded by Dr F. T. Duchateau, and fourteen other physicians, in the year 1805. Their number, probably from the jealousy of the imperial government, is restricted to sixty, and their sittings are held twice in the month. As the history of a machine which has been so long in operation, must afford some useful intelligence, it may be proper to add, that the address of the Society is, *M. Vassal, Secretaire-General de la Societé Medico-Pratique, Hotel-de-Ville, Paris.*

PART II.

REVIEWS.

I. PRACTICE OF MEDICINE.

A Nosological Practice of Physic, embracing Physiology. By GEORGE PEARSON DAWSON, M. D., 8vo. pp. 380. London, 1824.

THE above brief, though elegant, compendium of the practice of physic, the work of a respectable physician, of twenty-five years' standing in the profession, and evidently a man of considerable reading, and some observation, we perused on its first appearance. We know not whether the great law of seniority, should not now, by privilege, awe into meekness the caustic tone of modern review; who, all flippant as she is, must not be considered as entirely enfranchised from this primeval principle of courtesy, still so laudably predominant, and not least among the professors of the healing art. Certain it is, that in all that regards date, Dr Dawson is our predecessor; and if he possessed no other claim to our consideration, the mere circumstance of his having endured the purgatory of the press, whilst *we*, the sevenfold cord that cannot be broken, still lurked "small embryons" in the individual germs of our singular number, till the vivifying *fiat* of the publisher called us forth into life and union;—this mere seniority, we repeat, entitles the Doctor to smooth words and gentle imaginings from us, so many months his juniors.

Books of the description before us are generally published with one or more of the following objects in view. The work may be a simple manual, exhibiting the more useful parts of the established doctrine, and practice of the day, in a condensed form; it may contain merely a skeleton of these, with little labour in the abridgment, but some skill, or at least diligence, in throwing the technical axioms of the profession into popular, flowing language, and the work-day mood and figure of ordinary life; or, lastly, it may touch on random points of the outline; but only just so much as to afford the author an opportunity of introducing his own peculiar views and observations. Summary treatises upon any one of these plans, it is evident, may each of them become eminently useful, in that track which has been chiefly pursued by its author: the abbreviator assists the memory of the initiated; the balancer of words and periods instructs the profane vulgar in our mysteries, and repairs the wrong by multiplying the number of our hypochondriacal patients: while the man of originality, by the depth of his views, the cogency of his criticism, the weight and splendour of his discoveries, becomes an ornament to the profession, and a blessing to the human race. We would willingly refer the Nosological Practice of Physic of Dr Dawson to this latter class: it is the one most congenial to his talents, his opportunities, and acquirements; but he must forgive us when we add, that he has too much commonplace to free him from all suspicion of the first mentioned principle of composition; and too much familiar illustration to be fairly acquitted of aiming at the second. If he attempted to comprehend the advantages of all the three objects, he has certainly failed, as indeed to succeed with them all within the narrow limits to which he has confined himself, would be quite as hard as the proverbial difficulty of comprising a bushel in a pint,—and of as little value when it was accomplished. At all events, it is only as being the repository of the author's particular views, many of which we do not remember to have met with elsewhere, that we have thought it expedient to bring the present compendium under review; for, though its smart and sometimes brilliant pages will, we doubt not, make it a favourite with readers that are better worth pleasing than a bench of crabbed, care-worn critics, yet, as the matter, rather than the manner, of new works, is the object of our attention, we might, but for the former, have been content to admire in silence. Dr Dawson arranges the diseases of the human frame as follows:

Order I.—Febrile Diseases.
II.—Inflammatory Diseases.
III.—Nervous Diseases.
IV.—Cachectic Diseases.
V.—Functional Diseases.

We may remark, that this is barely tolerable. In France, it is at present maintained by many writers, that all fevers are *inflammatory*, and that no disease whatever is primarily *functional*, positions which sap the very foundation of the above classification;—but we will not worry the reader out of his equanimity, by a barren nosological discussion, even although our author

must have drawn the singular title of his work, the "*Nosological* Practice of Physic," almost solely from the supposed felicity of this improved collocation and memberment of disease. He has, indeed, attempted sometimes to remodel also the distribution of species and varieties, but with very chequered success; and, as the following quotation will shew, with no very distinct conception of the great objects of all scientific nomenclature, the easy distinction and recognition of individuals.

> "Authors divide diarrhoea into different kinds,—such as the loose, bilious, mucous, chylous, serous, and lienterious. Few things are more incorrect than the practice of dividing and subdividing diseases, as if their nature could be changed, or their cause explained, by attempts to fritter away their distinctive characters. In truth there is, as far as practical purposes are concerned, only one diarrhoea. No doubt the dejections vary in frequency, colour, smell, and consistency; but do these accidental circumstances afford grounds for serious distinctions? Admit an opinion so preposterous—apply it to other diseases, and then consider what it will lead to, and how it will end. What is meant by a *diarrhoea fusa*? Surely the word *fusa* is an unnecessay and unmeaning adjunct:—in the sister kingdom this would have been pronounced a *bull*. Again, *mucous, bilious, serous* diarrhoea, which are merely incidental occurrences, and exercise no influence over the disease itself. Why not a *green, black,* or *sanguineous* diarrhoea? The one would be equally proper with the other. What is meant by a *chylous* diarrhoea? Who ever witnessed one? Admitting, for the sake of argument, that chyle can be discharged *per anum,* yet its distinctive character would be totally lost by intermixture with fecal matter and intestinal secretion. Far be it from me to undervalue necessary practical distinctions, which are the boundaries of right and wrong; but distinctions like these are worse than useless, since they multiply names, without adding to the stock of knowledge."—P. 307.

Suppose a grocer were to apply Dr Dawson's argument to the tea he vends? Would his customers be better pleased, or better served, by hearing him assert, that, "as far as practical purposes are concerned, there is only one tea. No doubt the forms in commerce vary in colour, flavour, odour, excitement, and price; *bohea* is black, *caper souchong* black and shining, *hyson* green, *Pekoe* white, *gunpowder* nervine; but it is all one plant, one beverage; and do these accidental circumstances afford ground for serious distinctions? Few things are more incorrect than the practice of dividing and subdividing articles of commerce, as if their nature could be changed, or their manufacture explained by such attempts." We can hardly believe that a harangue in this tone would deter his maiden aunt from the additional expence at which she lays in her little magazine of *gunpowder*, or much avail Mr Fig himself, if acted upon, in his operations at the India House. He would rank higher with all parties concerned, were he to point out some useful discrimination, even though encumbered with a new name, of varieties hitherto confounded.

Dr Dawson is strong in anecdote, collateral remark and classical allusion, and to those who would mingle amusement with instruction, we can recommend his work with great promptitude. Sometimes, however, he seems to have overlooked objects which lie very much in his way. Among others, we were rather surprised to find him (p. 9.) attributing the discovery of cinchonin to M. Gomes, a physician of Lisbon, on the authority of Dr Barker of Dublin. We think it extremely odd that, on so important a subject as cinchona, neither Dr Barker nor Dr Dawson seem to have consulted by far the most universally diffused work on Materia Medica that ever was published in Britain, "The Edinburgh Dispensatory," the eleventh edition of which lies before us; and in eight of which eleven editions they would have found that cinchonin was discovered by the distinguished author of that work, Dr Andrew Duncan *junior*, now professor of Materia Medica in the University of Edinburgh, so early as 1803, and communicated to Nicholson's Journal of that year, vol. vi. p. 225. That they have also never had the fortune to peruse the Essay of Gomes, the following extract from that communication will abundantly demonstrate, though we give it chiefly to mark how charily the foreign chemists, who *must* have read it attentively, do historical justice to British invention.

> "It would appear that Dr Duncan, THOUGH HE MADE THE REMARKABLE DISCOVERY OF CINCHONIN, never obtained it *completely* separated from the other principles of Peruvian bark *, as he does not indicate the manner of obtaining it pure."

Dr Dawson does not dissent from the now sufficiently admitted doctrine, that the continued fever of this country is one disease in etiology and pathology, though varying, like almost all other diseases, in particular individuals.

> "V. *Synochus.* This is the common continued fever of these kingdoms; indeed, the only fever, marsh excepted. In a peculiarly rigorous system it is the cauma of Young and Good, the synocha of Cullen. In the majority of constitutions it shews itself in the form of synochus; and when, from mismanagement, or various other causes, this fever increases in violence, at the commencement assumes a different aspect, or exhibits malignant symptoms, it is typhus, admitting distinctions according to the leading symptoms. These truths acknowledged, the utility of venesection is apparent, and reconciles many discrepancies. Cullen, himself says, 'I am disposed to believe that the synochus arises from the same causes

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* See Edinburgh Dispensatory, article *Cinchona*, Mem. Roy. Acad. Lisb. vol. iii. Edin. Med. and Surg. Journ. vol. vii. p. 20.

as the typhus, and is, therefore, only a variety of it[*]' and Currie, of Liverpool, in his Medical Reports, has expressed opinions very similar to my own."—P. 23, 24.

The following are the remarks of our author with regard to Dr Armstrong's views of the varieties into which typhus fever divides itself:

> " My friend Dr Armstrong, distinguished by his successful writings, has divided typhus into simple, inflammatory, and congestive[†]; but these can only be viewed as different stages of the same fever, arising accidentally, frequently blended, and therefore unworthy to be considered as constituting three grand divisions. Yet it must be admitted, that Dr Armstrong's varieties,—they are nothing more,—are of considerable practical utility, and are founded upon the different phenomena of the disease, which are of common occurrence. Unquestionably we often meet with a simple typhus, where, from beginning to ending, no inflammatory or untoward symptom occurs: in like manner, typhus sometimes shews itself with a remarkable disposition to inflammatory affections of particular organs; and, lastly, it cannot be denied, but another kind of typhus does, although more rarely, appear, where it is neither simple nor inflammatory, but a fever in which there is a great and dangerous oppression, without any efforts in the system towards reaction. Such a fever is named congestive, which is a popular, and not a philosophical, term—and, like most popular terms, it is incorrect. Congestion, if it mean any thing, must mean obstruction? What obstruction? It is presumed, the patrons of the word mean—of the vascular system; for what else can they mean? Now congestion, in the sense it is used by the authors of it, having a general application to the whole of the vascular system, is, during life, physically impossible; for congestion of the vascular system is death, and what actually takes place in death. How can a system so important be congested, be obstructed,—for that is the true import of the word? The fact is, in congestive fever,—the word is used for the sake of distinction,—there is not, and cannot be, any congestion, or obstruction of the whole of the vascular system; but the vascular and nervous systems are greatly oppressed by the violence of the morbid power, and this impression imperiously demands venesection, which relieves the body from an injurious load, and induces re-action. Dr Good, so laudably sensible of the faults of other nosologists, has made fever a disease of the vascular system, and Dr Armstrong has done nearly the same; yet the nervous system, as will be adverted to hereafter, is equally, nay, perhaps, more engaged; so that, in accordance with Good's own doctrines, fever might have ranked under his *Neurotica* with great propriety. If ever any disease deserved the name of universal, that disease is fever, which acts on the whole body at once with resistless violence. No candid man, who attentively observes the phenomena of fever, can think the

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[*] First Lines, Part I, l. i. sec. 69.

[†] Armstrong's Practical Illustrations, &c. London, p. 9. 1816.

vascular system is principally affected; since he ought to know that the affection is universal, and particularly involves the nervous system."—P. 30, 31, 32, 33.

The following, we think, a fair specimen of Dr Dawson's style of *moralizing* upon professional points. Mr J. Burns, in a passage quoted, had said, "that a young practitioner may mistake spasmodic affections for puerperal inflammation." Dr Dawson subjoins:

"Nothing can be more judicious than these observations. Perhaps there is no greater source of fallacy in the profession, whether with respect to medical attendants themselves or their brethren, than to mistake the nature of a disease, and thence to affirm an happy issue. Unless we are assured of a practitioner's accuracy of discrimination, medical literature, so far from being illustrative and instructive, sinks into contemptible fable. If a man, either from a warm imagination, flippancy of decision, love of the marvellous, sheer ignorance, or ambition to perform wonders, confounds infantile remittent fever with hydrocephalus, pain from flatus with pneumonia or hepatitis; takes colic for enteritis, pain in the head for impending apoplexy, and pretends to have cured these; on what a foundation do some medical writings and some medical facts stand? —In this manner, it is to be feared, the public is too often deceived, error propagated, delusion spread, and reputations gained, where individuals ought to have been hated and despised."—P. 38, 39.

We fear Dr Dawson will have the physiologists against him, in the following, we confess, unexpected remarks, for which we seriously lament that he has not annexed the grounds of his belief.

"Although in strong respiration the thorax expands, and the intercostal, diaphragm (atic) and abdominal muscles, act and re-act; yet, in placid and healthy respiration, I am satisfied that all of them are apparently passive, and that the lungs alone are the active agents, perhaps slightly assisted by the diaphragm!" P. 77.

Dr Dawson has studied physiology above twenty years, and we doubt not his explanation of the above will be found interesting.

"In adverting, then, to the physiology of Blumenbach, I only promulgate my own, long ago adopted and firmly believed; and it is but natural that I should shelter myself under an authority so justly celebrated. If I preserve comparative silence respecting other men, it is not that I am ignorant of their publications; but only that I cannot subscribe to their incongruous hypotheses, illogical doctrines, and inconclusive experiments.—For farther information relative to the voice, and other matters concerning the larynx and its appendages, the curious reader is referred to the observations of Young * and Knight †." P. 124.

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* Phil. Trans. p. i. 1800.

† Analytical Essay on the Greek Alphabet. London, 4to, 1791.

Under the order of inflammations, our author has introduced "Pancreatitis," under the following character and history, which we copy, with all due praise for his diligence. It has been briefly noticed by Vogel, under the appellation and definition of "PANCREATICA. Pancreatis inflammatio, notæ desunt."

"XII. *Pancreatitis.* Pain and heat, chiefly referred to the back; sometimes imitating colic; occasional vomiting; usually preceded by, and accompanied with, dyspeptic symptoms.

"The pancreas is a large conglomerate gland, of a yellowish colour, long and narrow, and flattened anteriorly and posteriorly. The right extremity of it, larger than the left, adheres to the second curve of the duodenum; while the left extremity is connected with the spleen. From the right extremity there generally arises a process called the lesser pancreas. The excretory duct of the pancreas is membranous, white, and of inconsiderable thickness.—It passes through the middle of the gland, and penetrates obliquely the coats of the duodenum, along with the common biliary duct, by a common orifice. The pancreas is evidently of the same nature as the salivary glands; and although its secretion is with difficulty obtained pure, yet it bears a striking resemblance to saliva. It is said to supply the duodenum with a constant stillicidium of its secretion, termed *Succus pancreaticus,* which probably performs a similar office to the saliva and the gastric juice. F. Sylvius, R. De Graaf, and F. Schuyl, contended the pancreatic juice was acrimonious: but such an absurd opinion was refuted by Pechlin, Swammerdam, and Brunner.

"Pancreatitis is a stranger, introduced by myself into the temple of nosology, where it has an undoubted right of admission, although unjustly excluded by several nosologists. The disease occasionally occurs, but its pathognomic symptoms are not well marked; and hence it sometimes terminates in suppuration and gangrene, according to the testimonies of Barbette, Griesel, and others. In the case of Griesel, the patient was subject to colic, and died suddenly, only complaining of internal coldness. Many chronic cases of disease of the pancreas exhibit various symptoms:—thus of twenty-seven described by different authors, six were fatal, attended with gradual wasting and obscure dyspeptic symptoms, without any urgent ones; in eight, there were frequent vomiting, and more or less pain in the epigastrium; and thirteen terminated in death, with long continued pain, and no vomiting. In some, pain extended to the back; in others, it was increased by eating. In several cases dropsical symptoms supervened; in three or four, jaundice, from the enlarged pancreas compressing the bile duct. Dissection reveals various morbid appearances of the pancreas. In some instances this gland is much enlarged; in others, there is scirrhous hardness, without any increase of size. In fact, there is no distinct relation between urgency of symptoms and enlargement: sometimes there is great increase, with only slight symptoms; and, occasionally, hardness and trifling enlargement accompany symptoms violent and defined. Tulpius and Bartholinus found abscesses of the pancreas. In two cases by the former, the obvious disease was quartan fever. In a case of continued fever, with severe pain in the back, Guido Patin discovered an abscess occupying the whole of the pancreas. Portal detected a complete suppuration of the pancreas in a man who had died suddenly after two or three attacks of vomiting, followed by syncope. He had laboured under gout, and was supposed to be convalescent. Portal, likewise, found the pancreas, softened and gangrenous, in a patient who had expired under obscure pain in the abdomen; wasting, nausea, and diarrhoea. Calculous concretions occasionally have their seat in the pancreas. De Graaf saw seven or eight, like small peas, in a man long subject to vomiting and diarrhoea, and who, at thirty, sunk exhausted. In a person who had died from disease of the aorta, Portal observed twelve calculi in the pancreas, which was enlarged *. Dr Baillie † found one abscess of the pancreas, and commonly a hardness of it, which, in his opinion, becomes truly scirrhous. He once met with calculi, which were about the size of the kernel of a hazel nut, with a very irregular surface, and of a white colour. The pancreas has been entirely wanting, as a defect in the original formation ‡.

"If pancreatitis were to shew itself as evidently as other visceral inflammations do, the same treatment would be demanded; but the symptoms are so obscure, various, and contradictory, that no means of cure can be suggested: and all that can be done is to attack particular symptoms when they arise; and to bear in recollection how insidious a disease inflammation of the pancreas is; and thence to attempt to ascertain whether it does, or does not, exist."—P. 97, 98, 99, 100, 101.

Of the presence of inflammation in hooping cough, our author entertains peculiar opinions, in which he asserts that he preceded Dr Watt of Glasgow. It consists not in spasms, he maintains, but in an inflammation of the glottis, which either remains there, or involves the larynx, trachea, and lungs. The specific nature of the inflammation, like other specific causes, satisfactorily explains "why pertussis is often contagious, and why, in its effects as well as in its duration, it widely differs from common inflammatory affections," p. 125. We have not room for his other observations on pertussis, which, however, are rational and interesting; but subjoin his method of cure, which is logically deducible from their general purport.

"Called on to treat pertussis, active means should be employed, since the inflammation ought to be instantly checked. Doubtless all are not to be treated alike; yet, as a general principle, the advice is judicious. Ten leeches are to be applied to the integuments covering the thyroid cartilage; and a large dose of calomel should be given, and repeated every three hours. In the evening, after the bowels have been freely opened, an emetic may be administered, composed of ipecachuan and tartarized antimony. Next day

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* See Dr Abercrombie's valuable paper in the Edin. Med. and Surg. Journal, No. ii., April 1, 1824. New Series.

† Baillie, Morbid Anatomy, p. 273.

‡ Lieutaud, tom. i, p. 247.

will shew what impression has been made, which must regulate the repetition, increase, diminution, or alteration, of these powerful agents; and if symptoms be unfavourable, recourse must be had to venesection. Next in importance to these, and far superior to some of them, is opium; but which is only admissible after liberal venesection and copious purgation. Opium, in doses suitable to age and other circumstances, exercises an admirable effect in allaying the cough, preventing the accession of the paroxysms, and subduing the inflammatory action of the extreme vessels. Indeed this medicine, from its apparent utility, has been much recommended by eminent men; and as opium is famous for overcoming spasm, perhaps, in this manner, the idea of spasm originated, as appertaining to this disease, with which it has no connection. In the plurality of cases, a perseverance in the practice here advised, subject to the necessary changes which human life presents, will produce a restoration to health. There are no objections to a blister, or to the employment of the warm bath."—P. 129, 130.

At page 204 we find some scarcely interesting discussion, in which our author attempts to prove, that Julius Cæsar was *not* subject to the falling sickness. Such litigations, in the teeth of history, are not much in the taste of the present age; and sufficiently remote from the scope of a nosological practice of physic: but our author, moreover, has the misfortune to be egregiously mistaken in every one argument on which he has chosen to found his position.

For, in the first place, the fact of Cæsar's epilepsy does not rest on the authority of Suetonius alone, nor even of Plutarch, who relates precisely the same thing; but was so well known in Rome, at the very time, as to afford the best excuse that Cæsar and his friends could offer, for the act of insolence which led to his assassination. This was his neglecting to rise from his seat, on being addressed, in form, by the Roman Senate in procession. In short, they gave it out that he was prevented from rising from an apprehension of the usual consequences to him, when obliged to speak standing, namely, trembling, giddiness, and loss of sense; symptoms which are the ordinary precursors of an epileptic paroxysm. Secondly, so far from Cæsar labouring under the *leipothymia dyspeptica* in consequence of indulgence at table, as our author *conjectures*, he was the most temperate man of his time,—so as to merit from his enemy Cato, the high praise of being "the only person of sober habits of all who had attempted to seize upon the supreme power." With respect to his eatables, he was totally "*indifferent.*" (Suet. 48, 53.) No doubt all this was by advice of his physician, on account of epilepsy; for he had lived more freely in his youth, it is said; and Plutarch informs us, that "he did not make his epilepsy a pretence for indulging himself, but sought a remedy by strengthening his constitution, by long marches, and simple diet;"—the very remedies prescribed for the *morbus comitialis* by Celsus.

Thirdly, the health of Cæsar, "the world's great master and his *own*," was known to be so unfavourable towards the close of his life, that he professed the utmost indifference for the continuance of the latter, dispensing with his guards, and refusing to pry into conspiracies, and the like, as requiring too much anxiety for a boon no longer worth preserving. "Neque voluisse se diutius vivere, nec curasse dicitur," &c. ibid. 86. Lastly, the *morbus comitialis* is so accurately described by Celsus, almost the contemporary of Cæsar, and Cæsar was himself so eminent and accomplished an individual, that it is next to impossible that the nature of his disorder could have been unknown to himself, and to all around him; or indeed that it could have been any thing else than epilepsy, of which bad dreams, vertigo, and tedium vitæ, are frequent attendants.

The following are our author's views of the much agitated moral question, respecting the right of individuals to hazard the propagation of hereditary disease by marriage. To us it appears, that the lawyers take a right view of this subject, in leaving the innate energies of the human frame to work its own depuration, which, like a troubled stream, it never fails to do, before it has run through many steps of succession from the source of its adulteration. Were it *certain* that these diseases, in every instance, reproduced themselves in the offspring of the tainted parent, in that case it might be proper to interpose some legal impediment for the benefit of the heedless and unwarned; but, since that supposition is far from being verified by fact, to legislate on such matters would be quite as inept as to forbid by law, all persons from venturing to go to sea, or to the top of a chimney, because many lives are daily lost in each of these hazardous occupations.

> "Wherever an hereditary disease prevails in a family, whether mania, struma, or idiotism, it is the bounden duty of its youthful members not to engage in matrimony, and poison the blood of their unoffending offspring. Let it not be urged, passion is strong, desire vehement:—man and woman were born for higher purposes:—there are such things as virtue, conscience, honour; before which all meaner considerations ought to fall prostrate. The woman who makes a false step is covered with shame: the cold hearted seducer of unsuspecting innocence receives the contempt of every honourable mind; but these are saints, compared with him or her who, stained by hereditary disease, dares falsely and wickedly to marry a healthy object, and to embitter the marriage state by the birth of mad, scrofulous, or foolish children, who, in their turns, are equally base and criminal. Mental defects are propagated, as well as corporeal. 'We know,' says Haller*, 'a very remarkable instance of two noble females, who got husbands on account of their wealth, although they were nearly idiots, and from whom this men-

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* Elem. Physiol. lib. xxix. sec. ii. § 8.

tal defect has extended for a century into several families; so that some of all their descendants still continue idiots in the fourth, and even in the fifth, generation.' A scrofulous family is almost always consumptive,—another serious obstacle to gratifying the tenderest affection. Again, for though bad begins, worse remains behind, contrary to what might have been expected, hereditary diseases are great promoters of population: the world is considerably more full in consequence of their existence. The Jews, through whose veins leprosy flowed, increased faster than any other nation. In a few districts in the north of Europe, scrofula prevails as much as leprosy did among the Jews; and children are as numerous. Particular families, subject to either or any of these diseases, are commonly very prolific: it counteracts, in a great measure, the influence of those causes that have a tendency to occasion sterility; and preserves names that would, and ought to have been, extinct *."—P. 256. 257.

This passage may be compared with Mr Abraham's paper on hereditary diseases, printed in our last Number.

We regret that the length of time and quotation we have already bestowed upon the present work, merely leaves us room for a short extract from his valuable article on gastrodynia, p. 292., which, with many others in the work, we can seriously recommend to the reader's perusal.

" The pain may come on in the morning, afternoon, evening, or middle of the night:—according to my own experience, night and morning are the most common periods. With regard to the continuance of the pain, it may be an hour, two, three, five or six, and considerably longer, if permitted to proceed unmolested. A hearty meal or a copious drink of a stimulating fluid sometimes brings temporary relief. The pain is aggravated by walking, and slightly mitigated by reclining on the left side, and applying pressure by the hand. In some cases the pain is always in the stomach, and in the stomach only; but in others the pain does occasionally, for a short period, quit that organ, and, as it were, indifferently and fancifully affects the back, sides of the spine, or the integuments covering the sternum and ribs, thus implying the presence of flatus in the stomach. The pain itself is of a peculiar, and even of a varying nature. It is not acute, it is not lancinating, it is not spasmodic; it is neither sickening nor dragging:—they best can tell who have felt it:—the pain is *sui generis:* it is of an excruciating, aching kind, and of the most soul-depressing nature. The patient can stand upright, but he naturally bends the body, and presses with his hand, to obtain partial relief. Walking, reading, talking, or sleeping, are absolutely impossible. I have known a gentleman lie on the floor in agony, and have three distinct attacks, of three, four, and six hours, during twenty-four hours. Sometimes the stomach feels empty; at other times it seems distended, and gives rise to bitter or saltish eructations. Yet the patient, even on the rack of pain, is not ill; and the instant the pain ceases he is as well as he could wish. It deserves to be noticed, that this pain scarcely ever exists with pain in the head; and if, which seldom happens, the head becomes affected, an almost instantaneous abatement of the gastrodynia occurs. According to my experience, gastrodynia is comparatively harmless, when neither vomiting nor emaciation prevails."—P. 293, 294, 295.

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* Jarrold's Dissertations on Man, p. 303. London. 8vo. 1806.

For the relief of this affection, for cure there is none, he thinks opium the most effectual palliative: it is not even preventive; but he relates some interesting instances of the high degree of solace derived from its use.

" A well known living poet, sixteen years ago, occasionally walked into a druggist's shop, and swallowed there, with the most perfect indifference, one-third of an ounce of Turkey opium, and two ounces of the tincture. His health appeared to be good: he sometimes took wine or spirits; but whether he now continues the use of opium I am ignorant. A deceased and venerable judge, whilst sitting on the bench, has frequently been seen to drink the contents of a small phial, doubtless containing either the tincture of opium or the black drop *."—P. 296.

We must here take our leave of Dr Dawson's manual of the Practice of Physic, having afforded our readers, what is always our main object, fair specimens; from which they may draw their own conclusions in respect to the merits of the work. These are indeed of no inferior order; and though we have found it impossible, in consistency with our plan, to do justice to the sprightly penetrating remark, the elegant classical allusion, and amusing vein of anecdote which runs through the book, and will highly enhance its value with many readers; yet we feel satisfied, that we shall derive no discredit from endeavouring to direct attention to the more substantial pedestals of the author's popularity, his strong good sense, and obvious familiarity with the subjects he illustrates, enhanced in many of them by the novelty and justness of his views.

A short Inquiry into the Capillary Circulation of the Blood; with a Comparative View of the more intimate nature of Inflammation: and an Introductory Essay. By JAMES BLACK, M. D. S. R. N. and Member of the Royal College of Physicians of London.

IT is a bold task, for a young author, to enter into the very arduous field of research, which the foregoing title sets forth: And, in turning over the leaves of this volume, we fear that the medical reader will with impatience pass over a long Introductory Essay, which relates, far less to the subject intended to be discussed, than to general and acknowledged principles of medicine, with which, it is to be expected, every well educated practitioner has already made himself perfectly familiar. In the second essay of the book, too many pages are devoted to discussing the opinions of other authors, relative to capillary attraction; and this is the more to be regretted, as the views presented in the work before us may be found in most elementary systems of physiology. At the same time, it would be an injustice not to acknowledge, that the critical remarks of Dr Black shew, that he has very carefully studied his subject; but if he has written in an age when actual experiments are more impatiently sought for than dry inferences; and if the work before us partakes more of the last than of the first mentioned character, it has resulted from a circumstance, over which the author has had no controul; and with which we most truly sympathise. He observes, that his experiments "would have been prosecuted to a much greater extent, if an amaurotic affection of one eye of the experimenter had not made its appearance, during these and some other optical pursuits; and the delicacy of the organ since has deterred him from renewing similar investigations."

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* *Query?* Might not it have been *pure* ether? Your judge, it is well known, is creature that may be sophisticated after divers manners.—ED.

After this explanation we are silent; and can only testify our regret, that a calamity of this kind should have prevented Dr Black from further prosecuting certain experimental inquiries, which appear to have been commenced under auspicious circumstances. They were evidently suggested by those interesting experiments which were first conducted by Dr Thomson, and were explained by him in his valuable treatise on inflammation. Dr Black's were intended to be a sequel to them; and, as they form the most interesting portion of his researches, we shall give a selection from them.

"Exp. 1.—The frog being at rest, and confined in the bag, the web of the foot was brought into the field of vision, and the circulation was distinctly observed. The capillaries, when rendered more visible by turgescence, seemed like a mesh-work of irregular squares; and the arteries held a more direct course through these meshes, which were chiefly composed of veins. On the application of aqua ammoniae by the pencil, the circulation seemed for a while to be increased in velocity, and the arteries to be more diminished in diameter. Soon the lesser capillaries became more visible, and according as all the vessels became more enlarged, the velocity of the blood seemed diminished, and became very much retarded in the veins. A solution of muriate of soda was quickly followed by increased redness and enlargement of the vessels, then by retardation; and by a farther application, a complete stagnation followed, commencing in the smallest capillaries, and then retrograding to the arterial trunks, the blood in which was seen to be, as it were, forced upon itself, red globule on red globule,—the transparency of the vessel disappearing, and each faint propulsion only adding more and more to the stagnant canal. After the circulation in one vessel was restored by wiping off the solution, and by gentle pressure, two or three coagula were seen to be carried along with the renewed flow of the blood in the artery. The frog was a weak one, from being kept some days in confinement.

" Exp. 2. On a fresh frog.—The natural circulation in the web showed considerable velocity, with an obscure saltation; but when the velocity was very quick, all appearance of pulsatory motion vanished. The red globules seemed to dart through the capillary meshes from the more direct arteries to the veins, and appeared to be as much attracted by the one set of vessels, as to be propelled by the other. The capillary plexus is a separate set of vessels from the more linear arteries and veins of the part, and is composed of vessels, nearly all of the same size, admitting in the area not more than two red globules; and when the circulation is very quick, only one follows, or rather darts after the other, in rapid succession. The red globules seem at some distance from one another.—A perfect retrograde movement of the blood was observed in several neighbouring arteries and veins; it continued so for two or three minutes, when a fresh motion of the frog put all into the natural movement. An *error loci* was observed, in some globules adhering and moving on as a coagulum into a small capillary. A sudden pressure on the limb or stroke on the animal, arrested, for a few moments, the circulation. Oleum Terebinthinae and aqua ammoniae seemed to increase the velocity of the blood for a little, with diminished diameters of the vessels; but this was soon followed by their enlargement, and the globules became more distinct, and slower in motion. The application of the salt solution always retarded the motion of the blood, and enlarged the diameters of the vessels from the very first; and a continued application produced congestion, first, in the various capillaries; then in the larger veins; and, lastly, in the arteries leading to the part; which congestive state could be restored to contraction sometimes by Oleum Terebinthinae, when the paralysis was not excessive. Capillary arteries in motion were often observed to traverse wide plexuses of venous capillaries, in a state of congestion. A puncture with a needle was soon surrounded by congestion, first in the venous, and then in the arterial capillaries, until the circulation all around became very slow, and seemed stagnated—the arterial blood being returned from the part by the larger anastomoses. The stoppage of the current by the solution of salt, seemed to be owing to the globules themselves being the direct passive instruments, as they were arrested in canals large enough for their passage. Both arteries and veins, in one section of the foot, can be made to contract or expand by several applications, while similar vessels on the other side of the toe preserve their natural state. Stagnation in contracted vessels, except from the application of cold, was never observed. Two hours after the above experiments, when the parts had been inflamed by salt, &c. the blood was found not to have regained any circulation; on the contrary, the vessels were shrunk, and more free of blood.

" Exp. 3. A fresh frog.—The application of moderate stimuli excites the circulation a little, but enlargement of the capillaries soon takes place with a diminished velocity. The capillary veins are always the first to be enlarged or congested; and, when all the circulation ceases, or only a very slow one remains in all the capillary meshes, it is kept up through the leading arterial branches, propelling the blood into the contiguous veins, with a velocity more or less diminished. Two states of capillary inaction are observed; one is similar to a collapse, where no red globules, or no circulation, could be seen in the vessels; and the other is a congestive state, where the red globules are temporarily or permanently stagnated, and the diameters of the vessels enlarged, as happens after the application of the salt solution. An enlarged diameter of either arteries and veins, with an increased velocity of blood, is not observed; the natural circulation seems to be the quickest. It seems impossible to measure the velocity of the blood; it being sometimes so quick, that its motion cannot be observed, except by much attention, and then the track of any globule or set of them soon disappears:—the microscope no doubt increases this appearance of rapidity.

" Exp. 4. On a frog.—The brain was crushed, and the circulation observed in the foot previously unexperimented upon. The vessels sooner than before became more visible, the circulation also became retarded, and congestion took place in the order of vessels as before remarked; but the circulation continued twenty minutes after the injury of the brain, and, lastly, the blood slowly retired from the smaller vessels of all descriptions, and left the web pale and flaccid.

" Exp. 5.—The web of a young duck's foot was made the subject of this experiment. In two to four minutes great contraction took place in the large vessels; so much so, that many branches were rendered invisible, and others appeared like the finest hairs, which, before in their natural state, seemed three times the diameter. It was not a mere recession of the blood, for the line of the larger vessels was very distinctly contracted and well defined. After the space of about four minutes, all the vessels acquired their former natural diameters, and still further enlarged, to complete phlogosis of the part, or to what may be termed inflammation.

" Exp. 6. On a stout frog, newly caught.—In a few minutes, the arteries were quite visible, with the blood darting through them, with immeasurable velocity, and the veins also became enlarged, with a velocity seemingly diminished to one-third of what it previously was. The animal not struggling, nor confined harshly, nor wounded, aqua ammoniae was applied to the course of the arteries with the pencil. It then struggled from the stimulus; the vessels were then examined, but little alteration seen. In two to four minutes a visible decrease took place in both arteries and veins; in the veins first, then in the whole course of the larger arterial branches, which soon became visible, and not even the colourless globules could be detected in those vessels which formerly appeared quite red and distinct to the naked eye. The contraction remained permanent for nearly ten minutes, during which the arteries in the neighbouring portion of the web acted briskly. A retrograde motion took place in the leading veins. from which the smaller ones were engorged, and became gradually congested; and when the circulation recommenced in the artery, it was by pulsations, propelling a small coagulum, and, as it were, forcing open the contracted caliber, until the current was more or less generally restored. On its restoration, the blood took its due course in the larger veins, and the reticular veins, where they remained not totally congested, were much enlarged in diameter, with the blood circulating slowly; the arteries were also more enlarged than what was natural, and the velocity of the blood was more measurable. After having produced two or three repeated contractions, but none of which were so perfect as the first, the reflective phlogosis run on to complete congestion, and even to engorgement of the capillary arteries. On the other foot of the same frog, the arterial contraction after the application of aqua ammoniae was so strong in a large leading branch, that the return of the circulation was despaired of; but the saturated salt solution, in a short time, made the vessel visible, and quick and deep congestion in the reticular veins was at the same time produced. Congested capillary veins, and a quick circulation in the larger capillary arteries, were often observed."

"Exp. 10. On a frog.—One very remarkable appearance was observed in one of the webs previously untouched; namely, an ulcer with a margin beset with much phlogosis and inflammation. On being brought to the microscope, the inflamed circle was observed to consist chiefly of enlarged capillary veins, the blood in which was circulating very sluggishly, but was no where stagnant; the rest of the web seemed in a natural state of circulation, and no red blood elsewhere visible, except in the leading veins. On the application of oleum terebinthinae the vessels soon put on a fuller circulation; all the capillaries became open for the red blood, which circulated briskly; but, at the same time, the current in the vessels round the ulcers became more and more sluggish, until complete congestion formed all round the margin. The capillary veins, as they were more distant from the ulcer, retained more of the general activity of the web, until the whole fell into complete congestion.

"The parts thus run into complete congestion were, the following day, found entirely bereft of blood; no circulation could be detected, and the web was transparent and without colour, which no stimulus could restore, though the animal was still alive, but weaker."

From these experiments Dr Black deduces the following corollaries:

"*1st*, The greater part of the capillary bloodvessels are distributed in a reticular manner, the innumerable meshes of which chiefly affect the quadrangular form; and this tissue is principally composed of veins, and is intersected and supplied by more linear capillary arteries.

"*2d*, The more natural and undisturbed the circulation, and the stronger the animal, the greater is the velocity of the blood; except sometimes immediately after the application of a comparatively slight stimulus, which increases the circulation a little.

" *3d*, The healthy and natural circulation in the capillaries depends, directly, on a tonic or *tensive* state of their delicate tubes, and mediately, on some power inherent in the part, a degree of which power seems to reside in the blood equally with the vessels, and its energy depends more on the integrity or vitality of the part or parts of this system, than upon any impulse derived from the heart.

" *4th*, The effects of a stimulus are according to the length or intensity of the application; and, as regards the vessels to which it is applied, they are proportioned to the vitality of the part, and to the pressure of the column of blood in the leading arteries.

" *5th*, A strong stimulus suddenly applied, in a short time, produces a contraction of all the fibres of the part, and a diminution of the diameters of the whole classes of vessels, but more particularly of the arteries, which is followed, at a greater or less distance of time, by a corresponding dilatation—according to the extent of which, the phenomena of inflammation will be more or less observable; and more so, if the *vis a tergo* be powerful or stimulated.

" *6th*, A gentle or lesser stimulus produces an evanescent contraction, followed by relaxation, increased redness, and a slight acceleration of blood, in the *leading* capillary arteries and veins: owing, it seems, to the increased capacity of the distended reticular vessels, while the former are yet relatively contracted.

" *7th*, The circulation in the capillary system is independent of the controul of the heart, except so far as this organ affords a constant pressure, and a ready supply of blood, upon which the capillary vessels may act; and it is still more independent of the brain.

8th, There are three states, in which the capillary system may be situated, the more perfect degrees of which are, *1st*, an *atonic* or *collapsed* condition of the vessels, wherein no circulation takes place, nor can red blood be observable, but the return of both of which can be more or less easily accomplished. *2d*, The *tonic* or *tensive* state, which is the natural one, and wherein the circulation is brisk, uniform, and capable of being slightly accelerated by heat and moderate stimuli. The *3d* is the *turgid*, *distended*, or *congested* state, wherein the blood has a diminished velocity; but if dilatation has not reached a certain point, contraction and a quicker circulation can be restored. This last condition is a species of atony opposite to the first—both, however, depending on weakness or exhaustion in the part, but with a different contingency of the *vis a tergo*, or the pressure of blood from the larger arteries.

" *9th*, The *vis a tergo* being a constant force, the velocity of the blood is inversely as the diameters of any set of vessels, compared with the capacities of those which immediately succeed them—thus congested capillary veins and a quick circulation in the larger capillary arteries are quite compatible.

" *10th*, The condition of a part, in what is termed inflammation, is essentially seated in the capillary vessels, and primarily and chiefly in those of the veins.

"*11th,* Inflammation and congestion affect a portion of the capillary tissue, more from a local or topical condition, than from any action communicated by the vessels leading to the part.

"*12th,* Congested and even stagnant blood may be brought again into circulation; while a part, that has been deeply inflamed, or turgescent, in a short time, may be found pale, flaccid, and collapsed, in a dying animal."

Dr Black next contemplates the conclusions at which he has arrived from his own experiments, in connection with the well known views of Dr Phillip; and this has led him to attempt a still further generalization, upon which we can by no means congratulate him. Nor does he rest content even here. He has gone one step farther, and conceives that he is at length entitled, from his inductions, to give a definition of animal life. We present it in the author's own words. It certainly cannot be matched for unintelligibility with any thing that Dr Barclay has recorded in his excellent work on Life and Organization. "May not animal life," says the author, "be compared to a unit of power, in any one fraction of time; ever dissipating and ever generating, and retained by intimate but delicately poised affinities to the physical stratum of our bodies, and with a power proportionate to the slowness and gradual force of any divellent cause?"

We pass over the third part of the author's work, which is an Essay "On the Nature of Inflammation." As it is a dissertation far too speculative, and as it is unsupported by any further experiment, we cannot afford more space for an extract. The earlier quotation which we have given is by far the most favourable specimen of the author's labours, and must certainly recommend them to the notice of the physiologist.

Apparatus for restoring Suspended Animation. By J. Murray, Esq. Pp. 51. Glasgow, 1826.

This is a contrivance for duly apportioning the *quantity,* and modifying the *quality,* of the air which enters the lungs. We do not, for our own part, see any great advantage deducible from either of these modifications. The lungs can bear immense inflation without injury, as every lad in the dissection room knows; and although well oxygenated air is, beyond all doubt, the best that can be thrown in, the result of our own observations, and the experiments of others, clearly shew, that it is inflation, rather than *stimulation* (and this is no coined word), which resuscitates the asphyxiated. At all events, there is enough of oxygen in common air, even though once respired, to stimulate sufficiently. Mr Murray, however, proposes some collateral advantages, of which it might, perhaps, be worth while to ascertain the efficacy. He thinks the introduction of *heated air* into the lungs of the asphyxiated person might be of great benefit, and that when carbonic acid constitutes the exciting cause, a few drops of aqua ammoniæ in vapour would suffice to saturate it, and that the sulphuretted poisons might, by a like addition from the cylinder, be decomposed. The heated air might perhaps be useful, and, for this single chance, we think, the Humane Society ought to order Mr Murray's instrument to be kept in all their establishments: the expence is a mere trifle, and though it neither can, nor ought to supersede the more simple apparatus, or bellows, now in use, it might prove an useful subsidiary, in cases where the ultimate success of these seemed dubious. As for his chemical neutralizations, Mr Murray should know, that it is the *state of asphyxia produced by the poison*, not the *poison itself*, that it is our object to remove; and, that a single expiration, once excited, will be more effectual for the latter purpose also, than all the other resources of art put together. Were it possible to apply his cylinder before the patient is asphyxiated, then Mr Murray would be right; but as this never can happen, it is all the same whether he saturates the mephitick and septick gases he mentions or not. Saturation cannot prevent the effect which has already taken place; and it cannot, in the most successful case, be of half the utility of a few respirations in removing the exciting cause.

Practical Observations on certain Pathological relations which exist between the Kidneys and other organs of the Human Body, especially the Brain, Mucous Membranes, and Liver. By John Fosbroke, Surgeon, Cheltenham. 8vo. Pp. 144. Cheltenham, 1825.

Though the above title may seem better adapted to the first leaf of a communication to some learned society, where the correspondent's secret consists in keeping the wise ones in suspense, until the very peroration of the subject of their listening be over, we can yet assure our readers, that it comprehends, at least, the substance of the author's labours which it expresses so obscurely. The "*certain pathological relations*" occupy the whole of his pages, and, without doubt, are not easily to be reduced to simple intelligible terms, or confinable, as a chemist would say, within the narrow boundaries of a title page. "Reciprocal morbific action," &c. would undoubtedly have been a more explicit appellation: For, in the author's own words, "the essential circumstances" expressed in his work are the following.

"1. *That,* from simple deficient secretion, up to complete suppression of urine, out of disordered action, or deranged structure of the kidneys, *many degrees of cerebral disorder arise, from headache, even to apoplexy.* 2. *That,* in certain individuals, these last affections occur, either when *the kidneys participate in the course of some general maladies,* or when some *derangement* of the *kidneys alone* exists. 3. *That* the affections of the brain, which thus originate, have appeared, generally, to occur *subsequent to the affection of the kidneys.* 4. *That,* sometimes, an *alternacy* takes place; for instance, when the brain is *affected,* the kidneys appear to be *relieved;* and *vice versa.* 5. *That* the *disorder* of the cerebral functions seems *proportioned* to the more or less complete *diminution* of the *urinary secretion.* 6. *That* the affections of the brain are governed in the form which they finally assume, by the various dispositions of individual constitutions, *(the author)* having, in some observed *simple headaches,* especially in the *posterior regions* of the *brain;* in others *sick headaches;* in others *epileptic seizures;* in others *concurrent affections* of the *stomach* and *head.* 7. *That,* in certain cases, these symptoms, which denote a *diminution* and *obstruction* of the *urinary secretion,* with affections of the head, seated most commonly at the posterior part, *are accompanied* with the symptoms which denote *impeded* or *diminished secretion of bile.* 8. *That such affections* seem to be very incidental to members of the *same family.*"

These are our author's fundamental positions, and to illustrate them by many cases, observed in his own practice and that of others, with corresponding remarks, is the scope and substance of his undertaking. It is evident, that the subject, as here stated, has little novelty to recommend it, since it is scarcely possible to point out a period of the healing art so rude and barbarous, that the effects of ischuria upon the brain, or of comatose states of the latter upon the secretion of urine, were unknown. The connection of ischuria, with impeded biliary secretion, has not been so generally insisted upon, nor, perhaps, so universally known, as the former; but the practice founded on it, of giving diureticks in cases of hepatick obstruction, on which our author so largely insists, has been more or less in use for time immemorial. "Dandae vero sorbitiones sunt, (in hepatico, IV. 8, p. 171), omnesque cibi, et calidi, et qui non multum alunt, et fere qui pulmonis quoque dolori conveniunt; praeterque eos, *qui urinam movent, potionesque ad id efficaces.*" These are the words of Celsus, who goes on to single out the individual diuretick substances adapted to this purpose; and we know an able physician, at present practising at Versailles, who, from great experience in his own person, as well as in the pa-

tients committed to his charge, entertains the highest confidence in the utility of this practice. We must, however, do Mr Fosbroke the justice he has withheld from himself, in this introductory outline, by adding to his eight positions therein delivered, the *reciprocally morbific action* which he supposes to exist between the kidney and mucous membranes. Mr Fosbroke supposes the latter to be frequently subject to a diseased state, which he denominates the "*Morbus mucosus*;" and of which he supposes, that the *essential character* is a *discharge of thick ropy slime*, in *shreds*, *tubulated portions*, or *flocks*, from the bladder or bowels; sometimes almost alone, at other times mixed up with the proper secretions of those cavities. This *morbus mucosus* may have its seat in any one portion of the "*muciparous*" surfaces; but it naturally tends to carry its operation from its origin in the alimentary tube, as a consequence of impaired digestion to them all; and when those it affects happen to be small and tubular, such as the *biliary* or *uriniferous* tubes, then an obstruction of their canals takes place, the viscid and clammy adhesiveness of the mucus secreted glues up their little calibers, and only minute portions of the original secretion are allowed to escape,—more or less, according to the degree of obstruction which the superabundant mucus has produced.

Mr Fosbroke has been at much pains, and indeed displays considerable reading, in demonstrating (p. 60.) from ancient authors, Bonetus, Rolfinkius, Schneider, Zacutus, Paré, Sennertus, and others, that this mechanical obstruction of the excretory ducts by mucus, has actually been observed from anatomical inspection of the obstructed tubules themselves; and assures us, pages 5, 8, and 13, that he had himself witnessed strong evidence to the same effect, in his dissections. The notion, however, that the sympathetic catenation which produces this excess of mucus, is a consequence of the *mucous disease* being propagated from the intestinal canal to the seat of obstruction, and the consequent discovery of this being removable by the use of the oil of turpentine, after bleeding and purging, are entirely his own. His cases and arguments, we must say, have failed to produce conviction in our minds; but we consider the subject as one of primary importance, and have too high an opinion of the perspicacity and candour of Mr Fosbroke, to suppose that he would easily allow himself to be imposed upon, in the facts whereon he builds his hypothesis. It seems to us that he has mistaken the consequence for the cause; and that if he would carefully consider the phenomena of fistula lachrymalis, with which, as a professional surgeon, he may probably be more familiar than with the play of reactions, which connect the alimentary tube with the emunctories of the system, he will see that mucus never clogs up even the finest canals, unless as an *effect* of disease *pre-ex-*

istent in those canals; and that the obstructions which he describes, *if obstructions at all*, are in reality to be attributed to that swollen thickened state of the mucous membranes, which always accompanies an increase of their action. Still we have perused his book with interest; and that our readers may form some judgment of the style and views of a Cheltenham antihepatic practitioner, we subjoin a few extracts.

"Sennert was by no means ignorant of the fact, that mucus was occasionally a cause of obstruction of urine; indeed, he came very near to a precise knowledge of it. The following section of a sentence from that author will strike all who have read the foregoing pages, or observed closely cases of the same nature. 'If strangury do not arise from phlegmon, but a thick viscid humour adhering to the neck of the bladder; if part of this humour be effused over the intestinal tunics; and if, either by obstructing or generating flatus, it prevent the passage of excrement,' &c. Elsewhere we find in this author sundry reflections of like import, agreeable to faithful observation of disease."—P. 60.

"Believing, as I am compelled, that many disordered actions, which are claimed to be idiopathic affections of the liver simply, have origin in the aforementioned states of the stomach and intestines, and bear alliance to a similar affection of the renal organs, circumstances which are by no means to be overlooked in the treatment of these cases, I will now speak, in a particular manner, of the rise and progress of these hepatic arrangements."—P. 61.

"The acute enteritis erythematica, on account of the spasm in the course of the gall-ducts, which attends it, and more especially if there be any retching, is often confounded by common practitioners, with the cholera morbus of this climate; though the itching of the nostrils and anus, the redness of the tongue, the constant labouring efforts of the intestines in the evacuations of a watery mucus, and a quick passage of ingesta, with a sense of heat and uneasiness throughout the alimentary tube, are diagnostic of a very different affection. But that, as I have said, which chiefly misleads superficial observation, is the very great tendency in acute cases of enteritis erythematica, to spasm in the direction of the common duct, which causes the patient to raise himself in bed, and incline forwards."—P. 64.

"What is stated relative to the intestinal and uriniferous tubes stands in little need of further corroboration. Concerning the mucous occlusion of the gall-ducts, I profess, certainly, to derive my beliefs from analogy. Whatever primary influence the mucous membranes of the alimentary tube may have over the healthy functions of certain of the abdominal viscera, it is not to be denied that the former are, in turn, re-acted upon by the latter. It is even to be believed, that biliary obstruction, or deficient secretion, from habitual torpor of the liver, must greatly tend to keep up the mucous affection of the alimentary tube. If the venae portarum become distended, in consequence of the gorged state of the liver, and incompetent to commit their freight to the general circulation, it must be expected that the intestines will be forced to pour forth their secretions in morbid and superabundant quantities. If there be habitual costiveness, if the bile be deficiently purveyed to the intestines, mucus and feces will be retained till they become hurtful, and the intestinal canal itself will be weakened by efforts to get rid of its contents, unassisted by the natural stimulus; and such efforts will have a tendency to provoke habitual spasm."—P. 65.

"My first intention, viz. that of abating the spasm on the biliary ducts, was instantly and completely fulfilled, by the digitalis in clysters and in pills. Hardly any other than light twitches were felt after the nausea and diminution of general tension, produced by that agent. These last effects were so decisive, that I was obliged to give cordial doses of brandy. Subsequent and lasting loathing of stomach made the patient inflexibly averse from the repetition of the digitalis.

"Though the spasm was thus quelled, it was a work of great difficulty to produce satisfactory evacuations. It seemed clear, from the passive and distended state of the abdomen, that the obstruction arose from lodgments very hard to be moved. At the beginning I attributed this chiefly to spasm; I now suspected gall-stones: *the reduction of spasm, however, had not been followed by full evacuations, and, as it proved in the sequel, gall-stones were not passed at all.* It was not until discharges of inspissated mucus occurred, with white sheath-like substances, that there was confirmation true of the real nature of the impediment."—P. 74.

"I trust that these histories may help to remove the narrow and prejudiced views, which lead men to see the causes of diseases, connected with many organs, and with some general states of the constitution, through the economy and physical influence of one alone. I wish not that they should abandon altogether the opinions which they have formed, nor do I require for my own undue weight, but I would invoke a fair appreciation of the participation of other parts of the animal economy, the healthy functions, and co-operative treatment of which, are of equal importance with that of a single favourite viscus."—P. 75.

"*Respiratory Passages.*—It happens, sometimes, when this disease extends throughout the abdomen, that it attacks also the pulmonary tracts. Accretions of mucus are formed in the bronchia, and sometimes to that extent, that free respiration is at last interrupted. The symptoms which arise, in consequence of the spontaneous efforts of the respiratory tubes to divest themselves of the impediment, resemble those of an asthmatic paroxysm. Spasms of the pectoral muscles, a rigid state of the sterno-mastoid and anterior cervical muscles, and pronation of the head upon the chest, are not uncommon in these seizures. Three years ago, a man applied to me, who, for one year, had been affected with a disordered state of the mucous membranes, in different parts of the body. The symptoms were, flowing of water from the mouth, nausea, passing of slime and skinny substances from the bowels, in great quantities, painful flexion of the knee-joints; cramps of muscular parts, especially of the pectoral and sterno-mastoid muscles; pain in the course of the descending, and in the left hypochondrium; skin jaundiced; cough; expectoration of hard substances like false membranes; violent spasm of the trachea.

The internal symptoms followed the suppression of certain pustular eruptions by external applications. He was brought about rapidly by an emetic, the colchicum mixture, and the application of the tartar emetic ointment.

"For one year he had used the prescriptions of a gentleman, formerly a colonial practitioner, who gave him small doses of ipecacuan, and applied blisters to relieve the reiterated spasms of the respiratory passages. Not regarding these as efforts towards the dislodgment of morbid accumulations, this gentleman was misled by the resemblance, to consider the case to be spasmodic asthma, connected with malconformation of the thorax; and the more so, as a brother was given out to have died under the like circumstances. This diagnosis, however, was not at all to my mind; and with respect to the chest, I stated that it would avail little to treat it separately, without first looking to the condition of the abdomen. 'I never thought,' said the gentleman, when the results of treatment were favourable to this prognosis, 'of the abdomen!' The man continues in good health."—P. 107, 108.

Mr Fosbroke seems a writing man; and as his work affords internal evidence of much observation, combined with extensive reading, and embraces a great many of those tormenting nondescripts, which appear so often in females and hypochondriacks under the appellation of "nervous disorders," we scruple not to recommend his modest, smartly written volume, to a place in the library of the general practitioner.

Observations sur la Nature et le Traitment de l'Hydropisie. Par M. Portal, Premier Medecin du Roi, &c. Paris, 1824.

Observations on the Nature and Treatment of Dropsy. By M. Portal, First Physician to the King, &c. 2 vols. 8vo. Pp. 815. Paris, 1824.

The celebrated individual whose name ushers in the above monography, has now wielded the sheers of Clotho in high places for more than half a century; and, in the midst of an extensive and elevated practice, has found both leisure and industry to merit richly the character of a man of science; and, as we hear, of an adept also in those occult mysteries which accomplish the courtier.

In the present work, his object has been, "not to appear as a mere writer, whose sole object it was to make a book; but as a physician, who speaks according to the results of his experience; and who, according to the sentiments of Hippocrates, ought to shew himself, *non tantum dicentem, quam facientem*, less a man of words than a man of deeds." These are the author's own expressions,—and he has not deviated from their tenour.

M. Portal has divided his work into two volumes; of which the first contemplates dropsy in general, that is to say, without regard to the individual cavity in which the fluid is collected. In the second, the localities of dropsies are considered, and the circumstances originating from these, both in pathology and treatment, are extensively subjected to review. This mode of arrangement is apt and natural. M. Portal distributes dropsy according to the cause from which it originates, as follows:

" I. Dropsies from deficiency and excess of excretion.
II. Dropsies during or after different fevers.
III. Dropsies from plethora, inflammation, suppuration.
IV. Dropsies from eruptions with or without fever.
V. Dropsies from catarrh, and specific diseases, venereal, scurvy, &c.
VI. Dropsies from obstruction or degeneration of organs.
VII. Dropsies preceding, succeeding, or accompanying convulsions, coma, paralysis.
VIII. Dropsy complicated with hysteria or melancholy.
IX. Dropsy from pains, dentition, worms.
X. Dropsy from acrid poisons, emetics, purgatives, drinks.
XI. Dropsy after violent contusion, compression.
XII. Dropsy supervening during or after long diseases, or exhaustion.
XIII. Dropsy of females after pregnancy or delivery."

He then enters into a very detailed discussion of the various remedies which have, in different ages, been proposed for the removal of these various forms; and concludes with a long narrative of cases illustrative of each.

The second volume exhibits the local dropsies under the following heads:

" 1. Edema, Leucophlegmatia, Anasarca.
2. Hydrocephalus externus, internus; Hydrorachitis.
3. Dropsy of the *Eyes*, chambers, lens, hyaloid membrane.
4. Dropsy of the *Thorax*, lungs, pleura, mediastinum.
5. Dropsy of the *Pericardium*.
6. Dropsy of the *Belly*, ascites, hydatids, anasarca, stomach, peritoneum, pancreas, liver, kidneys, bladder.
7. Dropsy of the *Uterus*, fallopian tube, ovarium.
8. Dropsy of the *Apertures*, hydromphalus, hydrocele.
9. Dropsy of the *Articulations*."

Of the above, the anasarcous forms are the most superficially treated of; and this is the more to be regretted, that the author both seems well aware of their importance, and of the errors which prevail respecting them among practitioners. The other articles, on the whole, are respectably composed; and betray an extent of reading and observation at which our admiration is only allayed by the insignificant, or absolutely inert remedies M. Portal generally prescribes with the most unshaken gravity, for their cure. The following case from this ante-revolutionary patriarch, will recall some impressive associations to many of our medical readers:

> " The Countess de B * * *, aged 38, had for the last ten years been subject to an attack of mucous diarrhea, at the end of every twelve or fifteen days. This diarrhea continued two, three, or four days, and prevented the patient from going into society, or other engagements. She consulted me as to the mode of suppressing this evacuation. The patient was not thin, yet her colour was yellow; and I recognised, by touch, a little obstruction on the liver, and in the region of the right ovary. In other respects, her health was good. I shewed her the necessity of respecting an old evacuation of this kind, that produced no detriment, and advised her against suppressing it; but merely to combat the cause, which appeared evidently to proceed from congestion and obstruction of the liver, with an alteration in the nature and course of the bile, by means of the use of soap pills, with bitter extracts, and a potion made from the slightly aperient plants; finally, to drink a few glasses of Vichy water, which is frequently employed in Paris in similar complaints.
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> " I advised, in addition, with respect to the condition of the menses, which were scanty and irregular, some leeches to the anus or genitals, and to pursue that plan of treatment, with a corresponding regimen, for some time. This practice had, at first, happy effects. I advised the continuation of it, but my counsels appeared to the patient too slow of execution. She consulted Tronchin, first physician to the Duke of Orleans, one of the last disciples of Boerhaave, and who enjoyed a great reputation, more, it is true, among the great, than among physicians; although he was not, for all this, without luminous views, even in practice.
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> " Tronchin prescribed a very different mode of treatment: extract of bark, with cashew and the crocus of iron in large doses; a decoction of bistort root in Burgundy, at meals; a little tart sherry after dinner; and a drachm of diascordium in a spoonful of the same wine, to be taken every evening."

This treatment, to be brief, corrected the diarrhea, but was succeeded by general dropsy. Our author was again called in, reproduced the diarrhea and natural quantity of urine, and at the same time cured the dropsy.

" Will it be believed," he proceeds, " that this lady, dissatisfied with my practice, and desirous of a change, requested a consultation? Barthez was called in. He proposed bitter astringents, and large doses of opium gummosum in the evenings. The diarrhea was stopped; but, in a few days, a *new diarrhea* came on, and made rapid progress. Astonished at this relapse, the patient resolved to place in me her whole confidence; and had I not deserved this by my previous success? I resumed the means which had led to it, after employing diuretics, sometimes superadding acetate of potass, in very large doses.

"The patient was cured. She emigrated some years afterwards, in the possession of perfect health.

"Twenty years afterwards she returned to Paris, with a palsy of the inferior half of the body; in which state she lived there for some time, and at length died of apoplexy."

This is in every respect an interesting case, and is besides a good specimen of the manner in which this "hoary chronicler" applies the vast treasures of his memory and experience to the illustration of the many diversities of form and situation which dropsy assumes. We would advise the historian and biographer sometimes to dip into the writings of court, and other eminent physicians; they may frequently thus be enabled to correct dates, and even the characters, and circumstances often very erroneously attributed to the illustrious individuals who are the ordinary subjects of their study. Physicians have opportunities in abundance, which are carefully withheld from ordinary observers; and since their writings refer mainly to disease, their collateral evidence must often be of much greater authority, and always more impartial, than the exaggerated, interested, or obscure reports of fifth rate politicians and authors, who are almost always the original sources from which such information is derived. For example: of William the Third, one who knew him intimately (Bishop Burnet), has said, in his *History of his own Times*, "that the king had but *one vice*, and in that he was very secret." This passage we have heard very learned men interpret in a manner most unfavourable to the morals and instincts of that heroic person; and, as it stands, it is certainly a riddle, originating, we believe, in the indulgent spirit of the good bishop, and which only admits of solution from the perusal of a very rare work, the Life of Radcliffe the physician. In a word, this high spirited man, surrounded from his infancy with enemies and traitors, had given way to a temptation resisted by few of his countrymen, and which could be indulged in without the presence of spies, excessive drinking. "*If your Majesty*," says Radcliffe, "*will forbear making long visits to the Earl of Bradford's* (where the king was wont to drink very hard), *I will try what can be done to make you live easily, though I cannot venture to say I can make you live long*[*]."

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[*] Life and Letters of Dr Radcliffe, p. 38.

M. Portal has, in like manner, handed us down the causes which produced the death of many royal and noble individuals in France, and, amongst others, one which is in itself rather singular. This is dropsy, produced by whalebone stays, or stockings overtightly laced. The *Prince de Reuss*, for example, had long suffered the affliction of swelled legs; and to remove this sad reproach from the figure of a dandy of sixty-six, he had them strongly laced with leather stockings and bands; and employed, at the same time, a zone of whalebone, to compress the unseemly protuberance of his umbilical region. He died of hydrothorax, produced in consequence!

The *Duke de G*—— (M. Portal tells no tales of people whose descendants might feel resentment) had two unmarried daughters, whom he compelled to wear stays, laced to an intolerable tightness. By dint of thong and staytape, however, the eldest found herself united to a *Duke de C*——, and the youngest to a *Marquis de J*——; no doubt all very great and happy folks: but edema came on, which forced these ladies to relinquish their elastic prisons, though without the effect of restoring their health; and they both died, dropsical, and in exile. Did the fop of a father merit the honour of perishing with so many great men by the guillotine?

The late unfortunate *Prince of Condé* escaped all the fury of the revolution and the wiles of Napoleon, only to fall a victim to a pair of hard laced dog-skin stockings, which, at the age of seventy-six, he persisted, against the advice of our judicious author, to constrict upon his thick ankles to such a mortal elegance of contour, that he induced an incurable ascites, accompanied by hydrothorax, and even hydrocephalus; as M. Portal ascertained by dissection, (vol. i. p. 205.) It is needless to multiply examples of this despicable variety of self-destruction, rendered doubly disgusting by the age of its victims.

The investigation of the connexion subsisting between inflammatory action in the enveloping membrane, and the origin or continuance of dropsy, and, it may be, the discovery of two manageable therapeutical agents in digitalis and cream of tartar, constitute nearly all the claims to improvement in the science of dropsy, to which the moderns can lay claim; and we confess, that, knowing this, we feel astounded at the formidable masses of publication which are annually forthcoming from the press on this subject. Is it the mere extent of the argument that proves so inviting to the genius of scribbling? Or is a want of books on dropsy really acknowledged by the profession? Or, lastly, do these authors, discovering that they themselves have long been in the dark respecting the smaller details, hasten to enlighten a publick to which they attribute equal ignorance? We should like to be set right in these our conjectures, by some adept in the mysterious motives and transactions of the "Borough," or the "Row." They are far too deeply shrouded for our unassisted opticks. We shall conclude our notice of this interesting author, by an abstract of his remarks on dropsy, arising from inflammation.

"1. When bleeding is necessary in dropsy from sanguineous plethora, stimulating diuretics not only produce no augmentation in the secretion of the urine, but, on the contrary, diminish it.

"The same may be said of drastic, or hydragogue cathartics, which are so frequently and so indiscriminately prescribed in dropsies. This doctrine is confirmed by Sydenham, Mead, Cullen, and other learned British authors." (*He nowhere mentions Dr Blackall.*)

The success of bleeding, in such cases, has, besides, been recommended by the greatest physicians of antiquity, by Hippocrates, (de Diaeta in Acutis), Alexander Tralles, Paulus Aeginetus, Sponius, Riverius, Botallus, Ettmuller, Lister, Littre.

"Dropsy, therefore, in consequence of inflammation, is extremely common; doubtless, because the engorgement and induration of the albuminous fluids, which are its well known effects, produce a reflux of fluids into the collateral vessels; from whence it results, that the circulation in these is obstructed, retarded, suspended; that the serosity of the blood, which still preserves its fluidity, is effused into the surrounding cellular tissue, and spreads itself into the large cavities, if it is not retained in the cellular tissue of the parts even which have been the seat of inflammation.

"How far is this opinion of the cause of dropsy distant from that which merely recognizes the relaxation of the vessels, or the dissolution of the fluids? Causes which may, indeed, be real in certain circumstances, as, for instance, in scorbutic affections, but which are by no means the exclusive causes of those dropsies which are recognized.

"In this species of dropsy, after bleeding, it is proper to prescribe diluent fluids, and gentle diuretics; for the more active would prove injurious, though, unfortunately, they are but too much in use, even in active doses.

"I had an example of this kind in the treatment of Madame la Marquise de *Lavillemeneux*, a lady of a strong constitution, and fat; well known in Paris, from the four or five husbands which she had buried in succession, without being yet old. She had first a catarrh, some time after a violent, inflammatory, hepatic colic; the urine diminished in quantity; became red and thick; the ankles swelled, and ascites was imminent. She refused being bled, but some diuretics gave relief; when, at the suggestion of a quack of the name of *Graille*, she took a diuretic of his preparing, which was also slightly laxative. This remedy increased the urine so much, that she was enabled to go out in her carriage upon the Boulevards. The miracle was proclaimed every where, and no secret was made of the name of the physician who had previously treated her so ill. But the success of the new remedy was of short duration; a drastic purgative, prescribed by the same empiric, was rapidly followed by a total suppression of urine. The dropsy made new progress, and finally became mortal."—Vol. i. p. 68.

We have now given our readers a specimen of the manner and mode of thinking of our illustrious author, who is now, we believe, a Baron of France; and must refer to the work itself, which, without being very profound, is less jejune, and less dry, than might have been expected from the subject, and is, on the whole, a work of wonderful merit, considering the age and numerous occupations of its author.

Miscellaneous Works of the late R. Willan, M. D., F. R. S. F. A. S., comprising an Inquiry into the Antiquity of Small-pox, Measles, and Scarlet Fever, Reports on the Diseases of London, and detached Medical Papers from various Periodical Publications. Edited by Ashby Smith, M. D. Licentiate of the Royal College of Physicians in London, Member of the Medical and Chirurgical Society, &c. Pp. 488. London, 1821.

Whilst every merry Christmas brings out the "Remains" of some eminent personage, which the sage obstetricians of literature have deemed worth venturing upon ink and paper, the wiser portion of the reading population of our happy country pass their eye "on to the next," with as much indifference as if so many sheets of the Book of Prices, or Pigot's still more stupid Directory, had been obtruded on its vision. That this universal contempt for the impious embezzlement of the sweepings of dead men's closets is justly merited, all must confess: the *vox populi* proves it; and, above all, the well known intention of the authors themselves, had they lived, to have committed these shreds and patches—these mere memorandums of other days, and obselete studies, to the purifying influence of the slow but sure presiding deity of the forge and chimney.

Still there may be exceptions, in general, to this rule; and we doubt not but our learned readers will readily allow, that we have one particularly strong in the work before us. Dr Smith has not thought it consistent, either with the reverence due to his late illustrious relative Dr Willan, or with that respect which all men owe to the public, to present us with the scraps and pencil-marks of his common place-book, his letters to his cousins and admirers, his autograph, and portrait. He has estimated more justly the author's and his own respectability; and to a work hitherto unpublished, of immense research, and unbiassed candour, upon the antiquity of the smallpox, has added those other writings of its distinguished author, which, from their form and original mode of publication, were not likely ever to be united with his immortal labours on the description and arrangement of Cutaneous Diseases. Thus, the *Reports of the Diseases of London* existed only in the monthly Magazine for 1796, 1797, and in the Medical and Physical Journal, for the year 1799; or in a puny duodecimo of 1801, almost entirely out of print. The *detached papers*, in all but forty pages, were scattered through the volumes of the Medical Communications, the London Medical Journal, and the Medical Facts and Observations; so that, in the collection of these alone, Dr Smith has done a signal service to the admirers and consulters of the writings of Dr Willan, and greatly enhanced the obligation, by putting them in company, which will be sure to find their way into the library of every well informed or studious physician.

It is, however, with the "Inquiry" alone that we have any thing to do in this place; and we have been partly led to notice it with attention at this moment, when a cry is raised, or raising, from the east and from the west, from the north and from the south, against the securities, once valued so highly, from the formidable disease which is its subject, smallpox. The researches of a man so learned, so acute and retentive in all that regarded diseases of the skin, as Dr Willan is known to have been, cannot be considered as of light value in the history of variola; and although we coincide not with him in believing, that the malady was known to the Greeks and Romans, yet, we think that he has contributed materially to the advancement of our knowledge, by proving, beyond all chance of contradiction, that it existed in Europe long before the period of the crusades. It has been referred to that era by many first rate authorities.

Dr Willan's inquiry is divided into four chapters. In the first he brings to notice "vestiges of the smallpox existing between the third and seventh centuries." The second chapter investigates the description of smallpox, measles, and scarlet fever, described by the authors of the first, second, and third centuries. The third chapter comprehends evidences of the existence of smallpox before the christian era; and the fourth sums up the proof of smallpox being prevalent in Britain and Ireland, prior to the supposed origin of the disease in Arabia. To the evidence on these points, which was left deficient by the untimely death of the author, considerable additions have been made by Professor Monro of this place, in his work on smallpox, and by some others.

For the train of argument pursued by Dr Willan, and the mode in which he extracts, from the immense number of authors he has consulted, proofs in favour of his opinions, it is evident, that we must refer to the work itself. Neither could we do any justice to a piece of logical deduction, composed of so many mutually related fragments; nor, however we may dissent from Dr Willan, could our arguments be comprehended by the reader, without a repetition of that part of his text, on the insufficiency of which they are founded. We are content to state, in general terms, the conclusion of Dr Willan, that ancient authors knew and described variola under the respective names of exanthematous fever, pestilence, anthrax, sacer ignis, and herpes. He has produced abundance of evidence to prove, that variola, or an affection very like it, was *occasionally* confounded under one or other of these appellations; but we think it utterly improbable, that a dangerous or fatal affection, of which the contagion and pustulation form such striking characters, could, if really prevalent, have *remained* undistinguished from diseases so dissimilar. Hippocrates is nearly as endless as Sydenham, with his hairbreadth distinctions of fevers. Celsus follows Hippocrates, and Galen both, but with still greater minuteness; and it is next to impossible, that, in the immense mass of pathology, diagnosis and therapeutics the latter has left us, a disease like variola could have escaped all allusion, all illustration, all discrimination. If the Greeks borrowed their medical learning from the Egyptians, as the Romans did from the Greeks, it is just possible that, as in the case of elephantiasis, some traces of a disease they never saw might have been retained in their writings; but they would never have thought of *mingling it up* with other diseases which were daily appearing among them. How could the deformity it produces have escaped the poets and satyrists, or even the philosophers and physicians, of a country where the public use of the bath, and the exercises of the palaestra, rendered the *curatio cutis* a synonym for luxury, and where every defedation of that tissue was regarded with the utmost anxiety and disgust? Suetonius has no more neglected the cutaneous affections, than he has the vices, of the twelve tyrants who form the subject of his biography; and Horace, Juvenal and Martial, are pointed in their sarcasms upon the cosmetical labours of the Roman fair. "Foeminis cultus sui cura eripi non potest;"—yet we must, if we admit Dr Willan's view, believe that these soft daughters of luxury and gaiety had never been observed to feel alarm for the havock to which their beauty might be subjected, from an attack of a common and deadly epidemic.

It is only justice to his learned editor to add, that he has executed his task with much ability, and that his preface exhibits a masterly abridgment of the arguments of Dr Willan, as well as an interesting view of the opinions of others, upon a subject which, almost a century ago, was said to have even then engaged the pens of a thousand authors!

Transactions of the Medico-Chirurgical Society of Edinburgh, instituted May 1. 1821. Vol. II. with 5 Plates, pp. 412. Black, Edinburgh, 1826.

THE original papers contained in the above publication are as follows: 1, J. Wardrop, on Exanthematous Ophthalmia. 2, W. Hamilton, on Beriberi. 3, A. Berry, History of a Double Monster. 4, C. Hastings, History of a Monster. 5, A. Watson, on Chronic Iritis. 8, R. Hamilton, Case of Female Calculus. 9, A. Ramsay, Case of Female Calculus. 10, J. Stevenson, Proofs of the Contagious Nature of Erysipelas. 11, J. Howship, Case of Mollities Ossium. 12, P. Fairbairn, Case of Purpura Hemorrhagica. 13, W. P. Alison, on Sympathy. 14, J. Pitcairn, Case of Empyema. 15, C. J. Gairdner, Case of Carditis. 16, C. Miller, Case of Chronick Hydrocephalus. 17, J. Molleson's Remarkable Cases. 18, G. Ballingall, Case of High Operation for Lithotomy. 19, R. Christison, Cases of Arsenical Poisoning, with a great improvement of the solid Tests. 20, J. Gairdner, Case of Disorganization of the Stomach of an Infant. 21, G. Fielding, upon the Use of Silkworm Gut for Ligatures to Arteries. 23, T. Anderson, on the Use of Tobacco in Tetanus. 24, A. H. Renton, on the Dysentery of Madeira. 25, J. Crooks, Case of Impermeable Stomach in an Infant. 26, J. Boggie, Observations upon Gunshot Wounds. 27, W. Brown, Gastritis.

Nos. 6, 7, and 22, are translations from inaugural theses of the years 1824–25; thus, 6, A. J. Ralph, Account of Yellow Fever of Barbadoes; 7, C. B. Williams, Observations and Experiments upon Animal Heat; 22, J. Dill, Observations and Experiments upon Cutaneous Absorption. Of the 404 pages of letter-press which constitute the volume, these inaugural dissertations occupy one-fifth, or 83 pages; the communications of nine gentlemen not residing in Edinburgh, one-fourth, or 101 pages; and the contributions of four of the office-bearers of the Society alone compose three-tenths of the whole, or 130 pages. There are thus 68 pages left, to be divided among the eleven contributors remaining, as representing what has been produced by the spirit of the association in Edinburgh since 1825; or, allowing that the office-bearers have made no *efforts* to support the credit of the institution, a conclusion which the great volume of their own contributions would hardly justify, we shall have 220 pages for a measure of the enthusiasm of the medical talent of Edinburgh in the forthcoming Transactions. In the former volume, there were no theses,—only 26 pages contributed by strangers; and of the 688 pages of letter-press, 266 pages by three of the office-bearers, spread over 7 papers; and 422 pages, or more than the whole of the present volume, remain for the 19 contributions of the general members. The papers are decently printed, in uniformity with the former volume, and the five plates,—not worse than Edinburgh engravings are, by the prescriptive privilege of long custom, wont to be.

The papers are, in themselves, not inferior to the average of the transactions of other medical associations; and there is less inequality in them than occurs in most collections of the same description; so that, speaking of the second volume of the Edinburgh Medico-Chirurgical Transactions as a book, we scruple not to affirm, that whatever the merits of the former volume may have been, the present is one which does great credit to the individual contributors, and will find a place for itself in the library of every medical man of reading in the kingdom. Mr Wardrop's new complication of Ophthalmia, with exanthematous disease; Mr Watson's Chronick Inflammation of the Iris, betrayed by no uneasy sensation, impaired function, or scarcely any change of sensible qualities of that organ; Dr Stevenson's illustrations of the occasionally contagious nature of Erysipelas; Dr Pitcairn's case of Empyema, which no neglect, or no bad treatment, would render fatal, after paracentesis; Dr Gairdner's case of Carditis, but particularly his paper on the Disorganization of the Stomach of Infants; Dr Ballingall's case of the high operation of Lithotomy, almost frustrated by an unusual impediment; Dr Christison's improved test for the detection of Arsenick in cases of Poisoning; Mr Fielding's description of the use of *Silkworm Gut* in the ligature of arteries, and Mr Brown's case of unsuspected Chronick Gastritis, are the papers which will most interest the practitioner, and will be read with advantage and pleasure, by all who wish well to the advancement of the healing art. At the head of those contributions possessing only a relative degree of interest, Dr Alison's excellent paper, on Sympathy, must undoubtedly be placed. In it the author, with much ingenuity, has endeavoured to re-establish the Stahlian theory of Sympathy, formerly maintained by our acute countryman Dr Robert Whytt; namely, that *Sympathy*, such as occurs among the respiratory organs, in sneezing, for instance, only takes *place through the intermediate agency of sensation, and depends upon the degree of this.* Whoever reads Dr Alison's paper upon this subject, and the eleventh section of Whytt's book on the Vital and Involuntary Motions of Animals, entitled, "Of the Share which the Mind has in producing the vital and other involuntary motions of animals," (p. 294.) will be unable to deny, that, in a great number of instances, at least, the mind has "*a share*" in these operations; but whether that share amounts to causation, is a consideration which yet has received no determination from the labours of these two learned and contemplative Professors. In the second part of his paper, which is, in reality, double, and which apparently refutes some modern neurological theories, Dr Alison has been much more successful; and, indeed, we have always wondered, how Mr Charles Bell, who was once a believer in almost all the absurdities ascribed to nervous sympathy [*], should first have so unkindly reviled his *quondam* favourites, and then, all of a sudden, turn round upon us with nearly as baseless a fabrick of his own.

Doctors Hamilton and Ramsay afford us some valuable hints regarding the practice of dilating the female urethra for Calculus, lately introduced; and we consider the profession much indebted to the former of these enlightened and respectable gentlemen, for stating the unexpected difficulties with which he had to combat, in its application by means of Weiss's dilator. He describes the pain produced by that instrument, as being " of that character, that, had it been continued much longer, inflammation would have been the consequence, and this would have spread to the surrounding parts.

" The conclusion which I feel inclined to draw from this case, is, that, when the stone is of considerable size, it will not, in all cases, be possible, with the utmost care, to effect the necessary dilatation in *a short space of time;* and that the more gradual dilatation, carried on for several days, by means of the sponge-tent, will prove safer and easier, than the more rapid operation of the new dilator."

Of Mr W. Hamilton's observations on Beriberi we shall give some account in our next. Indeed we have been able only to find room for those of Professor Christison and Dr Hastings in the present number, in an abridged form, in consequence of the late period of our publication at which the Transactions came into our hands.

Doubts of Hydrophobia as a specifick Disease to be communicated by the Bite of a Mad Dog; with experiments on the supposed virus generated in that Animal, during the complaint named Madness. By ROBERT WHITE, Surgeon, Brighton. 8vo, Pp. 146. London, Knight and Lacey, 1826.

THIS is the work of the now celebrated gentleman of this name, practising as a surgeon at Brighton, who, on the 24th of

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[*] See Bell's Anatomy, vol. iii. 1st Edit. *passim.*

May 1825, upon being bit by a dog known to be mad, refused to resort to any remedy whatever, preventive or curative; and who afterwards inoculated himself in the arm with its salivary matter, and yet lives, a twelvemonth after, to tell his own wondrous tale. We taxed our means to procure, by the earliest conveyance possible, the "Doubts" of so courageously practical a sceptick; but we must say, that, however high our admiration has always been for the generous resolution which excited in us this mingled emotion of curiosity and esteem, yet, in the book, we have been rather disappointed. It was, indeed, perhaps wrong to imagine, that the strength of Mr White's belief, in the innocency of inoculation, was in any other than an inverse ratio to the strength of his arguments. Hope and confidence are not the choice companions of subtile ratiocination; and yet they are the motives that most generally impel mankind to the performance of daring or splendid achievements. Mr White had formed a decided opinion—acted upon it with consistency—and has met with a favourable result, which leaves himself, and the generality of practitioners, almost exactly in the same position from which they started. The impunity of his inoculation has added but one instance more to the many which were already known, of persons that had been bitten by rabid animals, escaping without an attack of the disease; whilst the sense of security Mr W. feels from the triumphant issue of his formidable experiment, only serves to confirm him more thoroughly in the noncontagious nature of the disease. He offers himself again for inoculation, should any number of practitioners agree on making a fresh trial. Convinced as we are of the communicability of the disease, even by the not unfrequent and fatal appearance of it after bites in mere children, who can have neither fears nor consciousness upon the subject, and in whom it has been known to *remit*, (as in Dr Johnstone of Dundee's case, in Edinburgh Medical and Surgical Journal), we sincerely trust that Mr White and his friends will be content with the evidence already before us, that the inoculation of true rabid saliva does not necessarily induce hydrophobia. We have just said, that it can no more decide the question, than the other cases which have preceded. There are many who consider the disease as entirely of the tetanick kind, merely exciting its irritation in the part bitten, and afterwards in others from reflected cerebral sympathy; and if this analogy with tetanus be allowed any weight, experiments of the kind quoted can no more prove the causelessness of rabid matter in producing hydrophobia, than the scratch of a pin healing kindly, could be an argument against the frequent origin of tetanus from that cause.

We had designed to go at length into the arguments brought forward by Mr White against the existence of hydrophobia from the bite of a rabid animal; but as we have not room for these in our present number, we shall content ourselves with referring our more impatient readers to the smart, though rather quaintly written, production of Mr White himself. Those of a less ardent temperament, will be glad to learn that he is alive, and well enough to publish books, and that he has come manfully forward, as an Englishman, to demand a fair hearing, from those whose prejudices might incline them to place his conduct under very unfavourable construction.

II. ANATOMY.

The Anatomy of the Brain, with a General View of the Nervous System. By G. Spurzheim, M. D., of the Universities of Vienna and Paris, Licentiate of the Royal College of Physicians in London. Translated from the unpublished French MS. by R. Willis, Member of the Royal College of Surgeons in London. 8vo, pp. 234. 11 Plates. Lond. 1826.

We are not of the number of those who would confound the merits of Drs Gall and Spurzheim with the untaught and petulant absurdities of those amusing persons, who mainly constitute what is in derision denominated "The Edinburgh School" of Phrenologists. Drs Gall and Spurzheim are learned men, gentlemen in their style of composition and intercourse with society, and have great merit in all that relates to the anatomy of the brain. We well remember what was the state of anatomical knowledge in respect of this organ, before the question of their discoveries was mooted in our island; and would not deserve the name of free and impartial men, did we not acknowledge, that whatever we and others have exceeded this bourne of comparative ignorance, is, in justice, to be attributed to the interest excited by the novel and ingenious views of Drs Gall and Spurzheim. One anatomist, now celebrated for his physiological researches, did not know at what point the pia mater entered the ventricles,—had never heard of the great central fissure of Bichat,—and was so enraptured when he found out a passage, though delineated by Vieussens and Haller, almost a century before, that he added a new plate to his work, comprehending the subject. Another, still more celebrated for his accuracy, did not know that it entered them at all; and the common fry of practitioners, who were not bound down to any great exactness in this branch of study, confounded the pineal with the pituitary, and the pituitary with the pineal gland, with perfect disengagement, in respectable hospitals.

Neither are we of those who would consider the evidence of Drs Gall and Spurzheim as entirely *concussed*, by their failure to demonstrate many small points to which they had pretended, both to the French academy, to the late excellent Professor Reil, and to Dr John Gordon of this city. Slips of this description are familiar to theoretical or fanciful men; and we question much, if any one ever saw above the half of what Leuwenhoeck pretended, or, in our own times, Sir Everard Home pretends to have seen, although both have the character of respectable observers, and would be entitled to every degree of credit in observations wherein they appealed to the concurrent evidence of the senses of others. The works of such sanguine writers are indeed perused with some degree of caution; but no judicious reader ever thinks of dispensing with their testimony. When, however, their assertions come to be weighed against those of others who have been less sanguine, or more fortunate; whose inward and outward man, in short, have been more exactly balanced in the matter of vision and touch, such adventurous philosophers must not be discontented, if they are overpowered by their antagonists. With this explanation, then, of our views regarding the *anatomical* merits of Dr Spurzheim, we shall proceed to the examination of his book;—expressing at the same time our abomination of the absurd pertinacity with which he would still have us believe in his phrenology. The object of the work, he tells us, pref. 23, is to present the principal views that may be taken of the physiological and comparative anatomy of the apparatus destined to the affective and intellectual manifestations. It will be found divided into nine sections.

"In the *first*, I make some reflections on the nervous system; *second*, speak of the division of the nervous apparatuses; in the *third*, I treat of the nerves of voluntary motion and of the external senses; in the *fourth*, I discuss the best mode of examining the structure of the brain; in the *fifth*, I describe the cerebellum particularly; in the *sixth*, I do the like in regard to the brain; in the *seventh*, I examine the commissures; in the *eighth*, the communication of the nervous parts with each other; and, in the *ninth*, I go into some anatomical points connected with physiology. The work will prove that I rather adhere to philosophical views and principles, than to mere description of the physical qualities belonging to individual masses, although this last be the most common, I might almost say the only, plan that is generally pursued. I have endeavoured, in an especial manner, *to class together the parts that constitute particular apparatuses*; a practice which, to our predecessors, was entirely unknown, as is abundantly evident from their nomenclature of the brain, and its parts."

But there is another object also it seems.

"What is my object, then, in publishing this volume? Our large work is too expensive for the generality of *medical students*, (bless the mark!), and further, the method pursued in the anatomy there, is only calculated for professed anatomists; whilst this book will be both less costly, and it will be adapted to the student as well as to the more advanced anatomist. Moreover, many *new ideas, possessing a great share of interest, may now be added*; for since Gall and I first published, the study of the nervous system has engaged the especial attention of anatomists and physiologists. I have myself continued inquiring, and conceive that I have made several discoveries. I have, however, copied some passages from the first volume of the large work already mentioned, and also given reduced drawings of several of its plates; because I think I have acquired a right to this volume."—Pref. xiii.

The rest of Dr Spurzheim's preface, embracing a sheet and a half, is occupied with a soporiferous detail of his own life and adventures as a phrenologist, his union, cooperation, and subsequent dismemberment from Dr Gall, and a rather foolish, because a silly and angry, criticism of the able "Anatomy of the Brain" of M. Serres. He then proceeds to the discussion of his nine sections.

In the first section, in distinguishing the two substances of the brain, Dr S. assures us,

"*That pulpiness, not colour, is the distinguishing character of the cortical matter.*"—"Vicq d'Azyr believed that he could trace pores in the pulpy substance; but what he saw was the white or truly fibrous substance intermingled or uniting with the grey."

"Dr Gall and I have said, that, to us, it appears to be the source or nourisher of the white fibres. Let us, however, distinguish in this, as in every other place, between facts and inferences. *Supposing that our ideas, concerning the inference, were really inexact*, the peculiarities I have mentioned (its pulpiness and the absence of fibres), and the essential importance of the pulpy substance to the nervous functions, must ever be admitted."—P. 7.

"Neither Dr Gall nor I ever thought of saying, that the portion of the *completely developed* nervous system, which is pulpy and grey, gives birth to that which is white and fibrous. We did but intend to announce the fact of a gelatinous greyish state of the brain, preceding its fibrous and white condition, precisely as we should say of its entire mass, that it is liquid before it becomes gelatinous."—P. 8.

What is become of the "organs of reinforcement" now? Alas, poor men of Edinburgh, undeceived when it is too late, we think we hear ye exclaim with your deluded countryman,

And be those juggling fiends no more believed,
That palter with us in adouble sense;
That keep the word of promise to our ear,
And break it to our hope!

With the following sentiment (page 9) we entirely coincide.

"Truth is, I conceive, universally harmonious; truth consequently cannot have been attained in any case (he means 'case phrenological') until anatomy, and physiology, and pathology, accord exactly."

This is good, sound logick. Dr S. further informs us, that,

"The first anatomical principle, in regard to the nervous system, is, *that it* is not an unit, but consists of many essentially different parts, which have their own individual origins, and are mutually in communication."

In Sect. II. our author contends,

"That a true division of the nervous masses can only rest on the nature of the functions performed. These functions are naturally separated into two grand classes, vegetative or organick functions, and phrenick, or functions having place with consciousness. The nervous masses belonging to the first of these are, the *great sympathetic nerves*, and *the ganglions*, and *plexuses* of the thorax and abdomen. I regard the masses of vegetative life, as independent of those of phrenic life.

"The second, or nervous masses of phrenic life, are commonly divided into the brain, proper, the cerebellum, *medulla oblongata*, and spinal cord, together with the nerves of these four parts."

Here Professor Blainville, who has ventured to fancy for himself (shall we call it speculate?) without orders, gets the reward of his unaccountable fidelity to the "Physiological System," in a severe castigation!

Sect. III. is, as we have said, dedicated to the consideration of the nerves of sense and motion.

"I do not believe that the only office of the spinal cord, with its nervous roots, is to establish a communication between external impressions and the brain, and between the brain and the instruments of motion, the muscles. To me it seems probable, that a very small part of the spinal cord suffices for these purposes; the particular portion, or organ, however, cannot, in the present state of our knowledge, be specified. The experiments of Magendie (*Physiol. transl., p. 94. Journal, vol. III. and IV.*) prove the abdominal roots to include the conductors of volition; but as each of these is composed of two halves, *the upper fasciculus and the lower*, the one superior the other inferior, and, in man, of two distinct cords, it would be interesting to extend the experiments, and, by cutting the halves separately, to ascertain whether both propagate the dictates of the will; or if this task is limited to one, to that, namely, which does not communicate with the intercostal nerves. The ganglions of the intercostal nerves, as well as those of the dorsal roots of the spinal cord, may possibly prevent the will influencing the functions of the parts to which these nerves are distributed. Dr Bellingeri says, his experiments prove, 1*st*, That the *posterior* roots of the lumbar and sacral nerves produce the motions of extension in the lower extremities; 2*d*, That the posterior roots alone preside over sensation; 3*d*, That the anterior roots produce the motions of flexion in the sacral extremities, and do not aid in perceiving external impressions; 4*th*, That the posterior bundles of the spinal cord preside over the motions of extension of the inferior extremities, and have no connection with perceptions of touch; 5*th*, That the white substance of the spinal cord, and the nervous fibres that arise from it, are appropriated to motion; and, 6*th*, That the grey substance of the cord, and the nervous fibres that spring from it, belong to sensation.

" The inferences from these experiments are in opposition to those deduced by M. Magendie from his own. I do not think with Dr Bellingeri that the vertebral nerves can be divided into those which come from the white, and those which issue from the grey substance of the spinal cord; because I find that the origins of the latter are, universally, implanted as it were, into the grey substance of the cord."—P. 50.

" No division of the spinal cord into dorsal and abdominal portions is effected by two such channels as separate it into halves laterally; it is, at most, only marked by the *ligamentum dentatum*, which attaches the cord, on either side, to the dura mater.

" The fissures on the abdominal and dorsal aspects of the spinal cord, are quite constant. The first is shallower, but more conspicuous, than the other."—P. 58.

In Sect. IV. Dr Spurzheim has explained, with laudable precision, his " best mode of dissecting the brain."

We were astonished to find the following broad assertion in sect. V. at p. 110. It gives the " science" a glorious lift!:

" The lobes are always to be distinguished from one another, and certain convolutions from others, with the same certainty as the annular protuberance is to be discriminated from the crura of the brain, the quadrigeminal from the mamillary, and the pyramidal from the restiform or olive like bodies. The general form and direction of the convolutions, even of the human brain, are, in fact, remarkably regular.

" Shew Gall," says Dr Rudolphi, " the organs of theft, of murder, and of the religious sentiment, separated from the cerebral mass, and be sure he would not know them." Dr Gall's reply is simply evasive:—But, for my part, I will accept M. Rudolphi's proposition directly. I am ready at any time to verify the above statement."—P. 112.

As there is nothing absolutely absurd, or intuitively false, in this statement, we hope some of the anatomists of London or Paris will soon put the Doctor's powers of discrimination to the trial. For our own part, we think it a mere bravado; as, did he certainly know such distinctive characters to exist, they could not with any propriety have been withheld from the present work, dedicated purely to the anatomy of the brain, and the reconcilement of the new discoveries to the phrenick theory; and treating, moreover, of this same challenge, to the extent of some pages. This is, without doubt, the place, of all others, where the anatomical characters of his five-and-thirty faculties, to each of which he actually assigns a local habitation among the convolutions of the brain, in Plates V, VI, and VII, of the present work, would have appeared to the greatest advantage.

The following extract contains the sum of the author's sentiments regarding the new discoveries, real or supposed.

" Here it will not be out of place to take a general and cursory view of what are entitled Physiological Experiments; the means which, in the eyes of experimenters, ought to establish and confirm the physiology of the nervous system in general, and of the brain and its parts in particular. Dr Gall and I have always declared against such violent means of obtaining conclusions. We prefer observing the relations between the development of different parts, and the exhibition of particular functions, and investigating pathological facts. However, I do not incline to neglect any means, whatever its nature; I conceive that it is a great mistake to confine inquiries within any one particular channel. Mr Charles Bell regards anatomical research as the means the most favourable to the progress of physiology. Messrs Magendie, Flourens, and others, on the contrary, prefer physiological experiments, in other words, mutilations; whilst M. Lallemand, again, seems to give the preference to pathological observations; pathological cases appear to have been more fertile hitherto in results both anatomically and physiologically, than mutilations. Observing, for example, that the effects of the lesion of one side of the brain were proclaimed on the opposite side of the body, the decussation of the anterior pyramidal bodies was sought for and discovered. Observing that great distention of the cerebral hemispheres did not impede affective and intellectual manifestations, the structure of the convolutions was inquired into and demonstrated. Remarking that sensibility may be lost without the powers of motion suffering, and that the power of locomotion may be lost without that of sensation being disturbed, researches on the nerves of these two sorts of functions have been instituted, and so on. Pathological facts, however, cannot be interpreted, in opposition to physiological observations. Will any one say with M. Foville and Serres, that the superficial substance of the brain presides over the intellectual functions, and the white and deep-seated masses of grey substance over locomotion, because he has observed that derangements of these two orders of functions accompanied organic alterations of the superficies, or internal parts of the brain? Will any one say, again, with Messrs Foville and Serres, that the great ganglion of the affective faculties (thalamus) and its white fibres are in relation to the motion of the arm, and the ganglion of the intellectual faculties (corpus striatum), and its radiating fibres to the motion of the leg? Is it not necessary, before such a proposition be received as correct, to prove physiological observations in harmony with these pathological cases? This, however, has not, and cannot, be done; hence, there cannot possibly be any truth in the above surmises.

" Physiological experiments would tend to the establishment of yet more extraordinary ideas. M. Magendie pretends, that, without the trigeminal nerve (fifth pair), we could neither hear, nor see, nor smell;

that the cerebellum is necessary to precision in all movements forward, as every severe wound of the cerebellum renders motion, in this direction, impossible; that the crura of the brain, the quadrigeminal tubercles, the pretended thalami, and striated bodies, have all functions relative to motion; lastly, that the nerves, arising from the posterior roots of the spinal cord, belong to sensation, and those of the anterior roots to motion, whilst M. Bellingeri* says, that his experiments lead him to conclude, that the function of the posterior roots is motion, especially motion of extension, and not sensation. He though the could confidently advance, that, when feeling only was paralyzed, the seat of the disorder was in the cineritious substance; that, in palsy of the locomotive powers, without loss of feeling, the disease was exclusively in the white substance; and that in palsy, of both functions, the two substances were altered at the place where the nerves distributed to the affected parts arise. In fine, if the loss of motion be a more frequent symptom than the loss of feeling, this, according to our author, happens from the white substance being situated on the outside of the spinal cord, and, consequently, in his estimation, being more exposed than the grey to the action of external agents.

"The cerebellum, by the experiments of M. Rolando, is made out an electrometer, or sort of voltaic pile, and the sole source of a fluid that excites motion; whilst M. Flourens, by his experiments, discovers that the cerebellum is the balancer, or governor, or regulator, of voluntary motion.

"In the opinion of some experimenters, the quadrigeminal tubercles are the seat of vision; but M. Flourens is led to consider them as the simple conductors of vision, which is not changed into perception but in the brain itself, because he found, that, on cutting away a lobe, he produced blindness of the opposite eye.

"The medulla oblongata, according to M. Flourens, is the central magazine, the vital knot of the nervous system, to which all impressions must come to be appreciated, from which the commands of the will must emanate to be executed; to which it is sufficient for parts to be attached, in order to live, and from which to be detached is sufficient cause of death. But M. Fodera, from his experiments, believes that the medulla oblongata is the seat of dozing and of sleep; he even accords to this part of the ancephalon some influence on the production of moral phenomena.

"Lastly, according to M. Flourens, the brain includes sensibility and will; without brain, no sensation, and no will. M. Rolando observed, that dozing and stupidity supervened each time he cut away the cerebral lobes. He conceives the brain to be at once the seat of the sensitive and intellectual faculties, and the agent of the cerebellum's regulating and directing power on the motions; an agent, however, which cannot influence the motions without the cerebellum, their immediate cause.

"The reader must have felt the jarring and contradictory nature and insufficiency of the preceding opinions. They do not appear to me worthy of any detailed refutation. Their contradictions bespeak clearly enough their falsity. I do not deny the facts, as they are reported by the experimenters; but I think these gentlemen over eager, and too ready to draw conclusions; I see them unapt to distinguish between facts and their causes—between primary and secondary causes—and to separate powers and conditions to activity from actions. I also think that they neglect the mutual influence of the several instruments too much; and that they frequently attribute to one condition that which belongs to several. The trigeminal nerve aids the nerve of vision, but the optic nerve is the instrument of sight; the olfactory nerve is assisted in its office by the nerves of inspiration of the nostrils; but it alone procures the special sensation we entitle smell."

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* Mem. dell' Academia delle Scienze di Torino, tom. 30.

These, with some criticisms of our author upon Messieurs Serres, Desmoulins, Tiedemann, Blainville, and a few others, are the only deviations from the old, heavy, humdrum routine of his previous anatomical writings. We were anxious to see a work upon the new views of the nervous system, by a person who had no small share in first directing the publick mind towards their investigation; but we lay it down, with a conviction that it will add but little to the former reputation of the writer, or the information of the reader. The experience of thirty years may have pretty well assured Dr Spurzheim, that one of his assigned objects in its composition, the affording an accessible outline of his anatomy to *medical students*, is but a forlorn hope; and general readers, and, we may add, faithful believing disciples, will be quite willing to take on trust what they are, at all events, not likely to understand. There is, however, less divergence in the present, than in most of his other writings, which is a merit of a new order in the composition of phrenologists.

III. PHYSIOLOGY.

Biologie; oder Philosophie der lebenden Natur, für Naturforscher und Aerzte. Von Gottfried Reinhold Treviranus.

Biology, or Philosophy of Animated Nature, adapted to the Study of Natural History and Medicine. By Gottfried Reinhold Treviranus. Gottingen 1803–1822. 6 vols.

TO the student of nature, and the aspirant in physiology, the approach of this great work towards a termination, will be hailed with gratulation. The extent of the attempt, at the commencement, certainly implied no inconsiderable prowess in the author; but it also presupposed an extent of labour and a length of time little short of what has been consumed in its execution.

"Our object," said the author in 1803, "is to hazard a new scientific experiment, in which we shall have no respect whatever to the application of the results of our inquiries to any one art or science. The objects of our research will be, the several forms and appearances of the *state of life*; the conditions and laws under which these circumstances present themselves; and the causes by which the same are produced. The science which embraces these objects I denominate Biology, or the Doctrine of Life."

It is evident that biology, or, in other terms, physiology, thus considered, will escape from the trammels of anatomy, pathology, and therapeutics, sciences of which, indeed, physiology may be the object or foundation, but with which she is never combined in teaching, without inconsistency; nor is there, either among gods or men, to speak Homerically, one who does not in his heart and soul pronounce every such combination an insufferable farrago. The writer has likewise an opportunity of presenting his readers with the state of the functions, considered through every degree and variety of animated being; and by thus gradually estranging himself from the technicalities of medical language, gains vastly in interest, without losing almost any thing in point of exactness. M. Treviranus has, however, more reason to value himself upon the development than the novelty of this idea. The term itself is a mere translation of the "General Physiology" of other authors. The latter, according to the views of a great living ornament of the study (Magendie, Pref.), is not yet sufficiently advanced to admit of being formed into a complete body of science; and, though there is certainly less foundation for this opinion at present than in the year 1800, it must still be allowed to have too much truth on its side, of which even the admirable work before us yields abundant evidence. Neither does the recently published "Physiology" of Professor Rudolphi afford a satisfactory exception.

At all events, it is worth something to know that an elaborate work of this kind, by a very able person, who has devoted himself to it, with enthusiasm, from his early years (Vorrede, b. iv.), is now fast approaching to a conclusion; and that, on the more important parts of the animal economy, recourse may already be had to it, with much satisfaction, in reference to almost every link of the scale of vital existence. Ten books of the whole have been published in the course of twenty years,—a period double that occupied by Haller's great work, which was completed in something less than ten years. But our author informs us, that he was detained a great part of this time by business, and the encroaching wars of the French under Bonaparte, whose avaricious grasp even the humble distant Bremeners did not elude.

Book I. comprehends, Interpretation of Nature. Plan, Limits, Classification, Gradation of living beings.
II. Organization of living beings. Distribution.
III. Revolutions of living beings.
IV. Education, Growth, Decay of Living Nature.
V. Nutrition of Living Bodies: comprehending functions and organs; motion of fluids; percolation, respiration, cutaneous exhalation, chymification, chylification, functions of pancreas, liver, spleen, porous glands, urinary apparatus.
VI. Heat, Light, Electricity of living bodies.
VII. Automatic Motions.
VIII. Nervous System.
IX. Union of Physical and Intellectual World.
X. External Senses.

The titles of these subjects, which are rather irregularly spread over six unequal volumes, we have thought proper to deliver here, lest some one should be disappointed in attempting to consult so celebrated an author on subjects of which he has not yet treated. It would be presumptuous in tiny wights of our caliber to affect to pronounce sentence upon the unfinished work of so distinguished and laborious an individual. It is, however, our part to say, that we felt both instructed and delighted with its perusal, and know of no single work in our own language to which we could have recourse for the information it contains. If we perceived any thing like dissatisfaction, it was from the argumentative metaphysical turn given to some of the early volumes; a juvenile error, from which the experience of maturer years has produced a laudable deviation. We hasten to lay a few extracts before the reader, that he may judge of the general tone of the work under consideration.

We give the few passages which follow, as illustrative of the *method* and *general acumen* which distinguish this learned composition; for the most voracious of our readers will not expect any more of us from so extensive an undertaking.

" ON ANIMAL HEAT.

" In the theories of animal heat hitherto proposed, one might deduce the deficiency of vital warmth in the classes of amphibia, fishes, and other lower animals, merely from the incomplete structure of their respiratory organs. But we have already repeatedly observed, that the distinction between the respiratory apparatus of these animals, and the lungs of mammalia, and of birds, is not sufficiently great to explain alone the so very much lower temperature of the first of these. The cause can only lie in this circumstance, that, in the amphibia, and other animals of the inferior classes, the blood possesses either no power at all, or only a very little, of abstracting heat from the air, and uniting itself with it. From the absence of this power arises the want of pulsation in the branches of the arterial system, and the simple circulation, which exist combined in these animals. The latter can scarcely answer a mechanical purpose, but must be the consequence of some higher cause, upon which, at the same time, a lower vitality of the blood depends.

" It may be objected to this theory, that, in all the circumstances in which an element of an increased capacity for caloric enters, a transition from the solid to the fluid, or from the fluid to the gaseous state, is found to take place; but that, in the commutation of venous blood into arterial, no transition so important occurs. But, in opposition to this suggestion, it is to be remarked, that, with the change which the blood undergoes in its passage through the lungs, the greatest events by which expansion and condensation take place in inorganic bodies, are not to be compared. Where fluids become expanded, this takes place by heat being imparted to them. In the arterial blood, the imparting of heat is the undeniable consequence of expansion. Fluids only suffer a similar change between the poles of the voltaic pile. Let a person take two glass tubes, of about two inches in length and two lines in diameter, filled with fresh blood, and unite them by a platina wire, the under end of the one with the negative pole, and of the other with the positive pole of a pile of that kind, whilst he, at the same time, dips both tubes into water heated to 96° F. In this way much water is separated in the negatively electrified tube; the clot contracts itself into a thick and firm mass; and the volume of the fluid is so much augmented, that the water, after some time, runs out over the tube, even if originally it had stood four or five lines under the upper edge. Again, in the tube united with the positive pole, the blood becomes changed into a posset-like mass, and diminishes its bulk, so as to fall down below its first position in the tube. Brandis, who first instituted this inquiry, neglected to attend to the change of temperature in the tubes. Buntzen, who sought for caloric, in the decomposition of a solution of sal ammoniac, by a voltaic battery of 1500 plates, at both poles, found that, as the temperature of the solution, before the experiment, was 55° Fahrenheit, the thermometer, a minute after the joining of the chain at the positive pole, rose to 59° F.; again, it stood at *50* F. at the negative pole. After some minutes, the latter rose to *55°*, then to 59° F.; and finally, both remained standing at 66° F. This experiment was made with a tube twice bent, in which the wires stood a long way from each other. In a tube only twice bent, and wrapped round with flannel, in which the distance of the wires was shorter, the heat from the evolution of the gases encreased from 64° to 167° F. The positive pole of the voltaic pile exhibits also a contraction of the blood, or possibly more or less of all fluids, and consequently evolves heat. The negative, again, produces expansion of the same; with which expansion, a union and disappearance of caloric is necessarily united.

" Of the extent of this expansion which the blood undergoes in its passage through the lungs, we know nothing. But if it even extends so far as to operate at each inspiration, the excess of caloric in the blood equivalent to 1° of Fahrenheit's thermometer, it thereby allows us to infer, that, by its means, the whole body must receive, within 35 minutes, a temperature of about 84° F. in a medium atmosphere of 64°. For, it is agreed, that, during every inspiration, five ounces of blood pass through the lungs, and that the number of inspirations in a minute = 20; then must 100 ounces = 5 × 20 become warm to 20° in a minute, if the temperature of five ounces is elevated 1 at every inspiration. Let us again suppose that the quantity of blood in the whole body amounts to 24 lb. and that this mass is to the mass of the whole body as 1 to 6, then will 2.88 minutes be necessary to heat the mass of the blood; and 17.28 minutes, to heat the whole mass of the body, up to 10°. Within the double of that time, or 34.46 minutes, the elevation of temperature of the whole body will amount to 40°. Now, if the thermometer, during this period, stand at 64°, and if the body has originally the same temperature of the atmosphere, then will its heat, after 34.56 minutes, = 40° + 64° = 104°, if nothing has been lost from the superadded 40°. This loss at the highest, from the small conducting power of the animal body, can hardly amount, during that time, to 20°. The temperature of the whole body, under the prescribed conditions, after 35 minutes, must therefore be 84°.

"This calculation is designed to illustrate, not to demonstrate. The condition assumed as a principle, that an animal body raises itself from absolute destitution of proper temperature to the maximum of vital heat, obtains not even in apparent death or lethargic animals. Respecting the return of heat in cases of restored animation, there is no information extant with which I am acquainted. But, in regard to the time in which dormant animals awake from their lethargy, ascend from the minimum temperature to the maximum, Saissy has recorded some observations, according to which a marmot takes 8 to 9; a hedgehog 5 to 6; a bat 3 to 4; and a dormouse 2 hours, to receive again their maximum temperature. From Saissy's observations, it is is evident, at the same time, that the accession of heat is not equal in equal times, but quicker at first, and gradually becoming slower as it approaches the maximum. This remark is also quite consistent with the theory, and from it may be explained the steadiness of animal heat. In man, and similar animals, the capacity of the blood for caloric increases directly as the temperature of the atmosphere more and more approaches to the freezing point. In great cold, on the contrary, weakness of the living powers, abstraction of animal heat, and, finally, death supervene. By the ascent of atmospheric temperature, that capacity becomes the smaller the nearer the temperature of the blood approaches 96° of Fahrenheit's scale, and beyond this it ceases entirely."—*Biologie*, vol. v. p. 80.

The same subject.

"We now conceive how far the suppression or encouragement of the activity of the vessels and the influx of the nervous mass coincide with the production of vital heat. According to our theories, they operate upon these partly by that mixture of the blood, by means of which it is practicable to undergo and maintain an elevation of its capacity for caloric during its passage through the lungs; partly through the heat, united with the arterial blood in the lungs, which becomes again free caloric in the progress of the latter."—P. 69.

"The proximate cause of those changes is the influence of the nerves upon the blood; the expansion and contraction of this fluid, of which the combination and evolution of heat is a consequence, must depend upon this influence alone."—P. 69.

With regard to animal heat, under another point of view, he also remarks:

> "But even in all those cases in which the circulation is circumscribed, the motion of the heart proceeds. The power of this organ is then indeed weak. But, in the dying, it is still moved, although the power of the heart is certainly as little, and often less, than in those experiments. Do the arteries also possess a power of contracting and expanding themselves? Are these the motions which principally maintain the circulation of blood, and which must be lost when the influence of the nervous system is withdrawn? But the bloodvessels of the amphibia support themselves with a gentle passive circulation, and yet the same appearances occur in them as in the warm-blooded animal, upon the destruction of the spinal marrow. *From all this, then, the only conclusion that can be drawn is, that the blood possesses a proper moving power, which depends upon the nervous system, and to the continuance of which, the undisturbed influence of this system, particularly of the spinal marrow, is necessary.—Le Gallois has drawn from the same experiments conclusions which are totally different from mine.*"—Vol. iv. p. 272.

In fine, we must leave this eminent person to the closet tribunal of the reader; merely adding, that the "Biologie," his own proper labour, does no discredit to the recently published Physiological Journal which bears both his own and his brother's name, combined with that of Tiedemann.

An Inquiry concerning that disturbed state of the Vital Functions usually denominated Constitutional Irritation. By Benjamin Travers, F. R. S., Senior Surgeon to St Thomas's Hospital, &c. &c. &c. London, Longman, Rees, Orme, &c. 1826.

More important pathological researches than those which are contained in the volume before us, have seldom fallen into our way to notice, and we need scarcely add, that they are from the pen of one of the most attentive medical observers of the present day. It is our intention to present our readers with a general view of the author's opinions and speculations on the subject upon which he has been so industriously employed; but we are concerned to find that this is a task of no small difficulty, and we much regret the plea we shall have to allege in our defence, should we fail in this object. The cause must be sought for in the want of due arrangement in the materials which we have to review. Seldom, indeed, has it been our lot to see more valuable observations than in the work before us, yet more unsystematically put together. Several sections might be pointed out which appear in the body of it as perfectly insulated researches; their connection with the main object of the inquiry being left to the sagacity of the reader to find out. But it must be recollected, that Mr Travers is a practitioner deservedly in the greatest request in his profession, and, we suspect, that this volume must have been unavoidably written during the hours snatched from a most extensive practice; that the author took up his pen with no other view than to write a short essay, but that, in the zeal of inquiry, the subject grew under his hands: having therefore, like too many of us, miscalculated on the quantity of materials which he should require for its amplification, and the time necessary to record them, he had so much the less leisure allowed him to make preparation for their proper arrangement. We have little doubt but that this is the true state of the case, and can readily make for it every liberal allowance. For whenever any practitioner of equal observation has the opportunity of conferring a boon on medical science as valuable as this is, we shall be most strongly tempted to excuse the imperfection of arrangement, however irksome it may render our labour as reviewers. In the present instance we are of opinion, that an opportunity will be very soon afforded, in a new edition, for the author to correct the deficiency which we, as reviewers, are bound to notice; for we confidently anticipate that the success of this work with the medical public will be of no ordinary kind.

The volume is, as the title expresses, "An Inquiry concerning that disturbed state of the Vital Functions, usually denominated Constitutional Irritation." In the present number of our journal the limits of our pages will allow us to do nothing more than to give, without comment, an abstract of some of the general views inculcated. This we shall attempt, and shall state them as much as possible in the author's own language.

The general contents of the work are, "On the influence of Constitution in modifying the effects of local injury,—on the effects of local injury on the Constitution,—examples of direct Irritation,—the Theory of Irritation,—and on the Pathology and Treatment of direct constitutional Irritation."

The phrase Irritation, as Mr Travers very properly observes, has no precise idea fixed to it. It is in constant use, and appears so to satisfy or suspend inquiry relative to unforeseen results, as to be little better than an empirical subterfuge. It is also, still a desideratum with the pathologist to investigate the morbid state indicated by the term constitutional irritation, the causes most commonly productive of that state, the phenomena by which it is manifested, and the laws by which it is governed. This inquiry must necessarily lead to the acquisition of more scientific principles, with the ultimate view to its treatment.—Preface p. vi. and vii.

Every living animal has its peculiar functions, to the performance of which it is incited by an appropriate stimulus. Its susceptibility, therefore, of the impression of such stimulus is denominated its *irritability*. Consequently, if an organ, perfect in respect of structure and nourishment, be insusceptible of its stimulus, it is devoid of irritability; and if the organ be imperfect, its irritability and function will be imperfect, (p. 1). The sign of irritability is, according to the function of the organ, in some sensation, in others motion; in some a combination of these, and in others a result of such modifications of sensation and motion as escape our powers of perception, and of which we discern only the effects, (p. 2). Irritability is, again, an inherent property of the living system, and is not only indispensable to the functions of those organs by which life is maintained, but is the earliest and the latest indication of life.—P. 3.

An excess or deficiency of the natural stimulus, or the operation of noxious agents, will convert healthy into morbid irritability; and a natural stimulus applied to an organ, already morbidly irritable, becomes an irritant. An irritable mind is one easily excited, and over exerted in reference to the occasion, whether to joy or anger, fear or pity. An irritable stomach is nauseated by many ordinary articles of diet. An irritable bladder is continually parting with its secretion before the stimulus of distention can be supposed to act; and an irritable retina is distressed to dimness by a pale light, and, like the mind, disturbed by the surviving representation of transitory impressions.—P. 7, 8.

Irritation is the name given to that state which is produced by an extraordinary excitement of the irritability either of a part or of the system.—P. 39.

Morbid irritability and irritation imply *weakness*. Mr Hunter defines an irritable habit to be "an increased disposition to act without the power to act with;" in another passage, he describes irritability "over action with the parts." Extreme susceptibility, and consequent over-activity, are invariably coupled with, and most probably depending upon, weak and insufficient powers of constraint and resistance. A weak organ, or constitution, is one easily disturbed and put out of order, because it is continually exposed to greater activity than it has power to support; greater, therefore, than is consistent with the harmony of the system. But an action may be morbidly excessive or deficient, independent of organization, and this irregularity, although occasional in its commencement, may become habitual. A too irritable nervous or vascular function is therefore as marked a constitutional peculiarity as irritable lungs or skin.—P. 13, 14.

The phenomena of irritation are chiefly displayed in the nervous system; and irritation is thus distinguished pathologically from inflammation which belongs to the vascular.—P. 39.

When irritation is local, it is demonstrated, *first*, By an alteration in the habitual and proper sensation or action of a part; as a depravation or suspension of function in an organ of sense; an aberration or delusion of perception; an irregular and involuntary action of muscles, or a partial paralysis, &c. *Secondly*, By pain, unattended by any other sign of inflammation. The irritable joint, breast, testicle, and prostate gland, give no evidence of inflammation. When irritation is unaccompanied by inflammation, it may be, and often is, remote from the seat of the pain, and other signs of disorder, by which its existence is known. The disease called *tic douloureux*, exemplifies this fact abundantly. *Thirdly*, When local irritation is acute and permanent, inflammation ensues, which is proportioned to the severity of the irritation, and the habit of the patient. Of this, contusion, sprain, wound, and the operation of extraneous substances in the production of abscess and ulcers, are examples. When the act of inflammation is provoked, the original irritation loses its independent character, and assumes a symptomatic form. But, besides inflammation, in which local irritation may terminate, it may also gradually subside or retrocede, or, in other words, go off by resolution. Another, however, and most important termination of *local*, is in *constitutional irritation*, indicated by a propagation or extension of the irritation to the great sources of nervous energy, and from them to all parts of the system.—P. 40–45.

We thus find that irritation may be considered, *first*, as *local*. In this case, irritation is confined to the part, the constitution, from whatever cause, taking no cognisance of it; and this may endure for an indefinite period, even though it be coupled with a chronic alteration of structure. In the *second* place, irritation, so far from being local, may compel the *constitution* to notice and sympathise with it, even in its nascent state, and before any alteration of texture is threatened; the difference being determined by the seat and character of the inflammation, or by the measure of natural irritability in the constitution.—P. 46, 47.

Irritation may thus be considered as either *local* or *constitutional*, a distinction which it is very important for the practitioner to always keep in view. The removal of a mutilated limb, provided the interval of time be so short as to identify the operation with the injury, anticipates, or at least infinitely diminishes, the far greater evil of constitutional irritation.

The effects of local injury on the constitution, and the mode by which these effects are brought about, thus become objects of the highest pathological investigation: for which reason it is of primary importance to discover the reciprocal relation of the vital functions, and the physical and functional derangements to which the nervous system is liable. (See Chap. V.) It is the nervous system which is specifically instituted to receive and to transmit impressions, both from within and without; and, by this means, to establish the relation of all parts of the system with each other, and of the whole with the material world, (p. 429). The brain, in totality, holds in dependence, immediate or intermediate, all the phenomena of life. It is not only the organ of intellect, of sensation and volition, but the source of instinctive and of involuntary actions; so that its influence maintains the processes of circulation and respiration, and all their dependencies. With the immediate functions of life, the central and best protected portion of the cerebral mass, including the tubercula quadrigemma, and medulla oblongata, appears to hold the most intimate connection, (p. 416). Such being the universal diffusion of the nervous system, the necessity of its being preserved unimpaired becomes obvious. We can, with certain precautions, take away limbs with impunity; but we cannot, while a limb or a muscle remains part and parcel of the system, divide its nerves, without injuring its vitality, or irritate them, without disturbing that principle at its source, (p. 432). In some organs which are affected, the morbid phenomena of the brain predominate; in others, those of the spinal medulla. All organs are subject to be affected by remote morbid actions, through the medium of the brain; and this organ is especially liable to be itself affected in its function, both by external and internal causes, (p. 431). In short, the universal diffusion of the nervous system, and its universal sympathy, must be constantly borne in mind. For, if we consider the relation in which the brain, or the respiratory muscles, or the heart, stand to all other organs, so strict is their mutual alliance, and their intermediate relation to life, and all the subsidiary parts of the system, that the several casualties and diseases of parts remote from them, and only linked by the common bond of universal sympathy, which is indispensable to the perfectness of animal existence, approach in effect to such disorders of these organs themselves; in other words, the functional derangement of the organs of life, is an ordinary consequence of injuries and diseases of structure in remote parts, (p. 434). Sympathies are, in fact, associations founded on a reciprocity of sensations and actions. Thus, they are made up of sensibility and irritability. Some are direct, as between organs served by branches of the same nervous trunk; other circuitous, as between organs remote, but maintaining an indirect communication through the medium of the brain. Contiguity, and continuity and duplicity of textures and organs, appear to influence, if not to generate, many partial sympathies; and, it is probable, all are strengthened and cemented by the influence of custom or habit. The morbid sympathies of remote parts influence the course and character of diseases in a remarkable manner, as is seen in the effects of morbid poison, and in neuralgic and spasmodic diseases. Contiguous, and continuous morbid sympathies, are best exemplified by the phenomena of local inflammations.—P. 12.

From these remarks irritability may be considered as *direct* or *sympathetic.*

Every *sympathetic* action presupposes a *direct* one, though the latter may elude observation, while the former is so conspicuous and predominant as to appear to constitute the disease, (p. 11). The *direct* injury of an organ affects its functions secondarily. That which is *indirect* or *communicated through the medium of sympathy*, acts first upon the function. Paralysis of the bladder succeeds to a violent blow upon the loins, but it also frequently succeeds to the removal of a tumour, or the infliction of a blow, or a spreading inflammation upon any part of the body.—P. 436.

Irritability may again, when applied to the system or organs, be either *proper* or *sympathetic.*

First, As applied to the System. If the body is deranged through the medium of the mind, or, *vice versa*, the mind through that of the body, it is *sympathetic.* But, it is equally possible for the irritability of either to be singly and directly acted upon, and the other not affected, or, if at all, secondarily; thus, a man may lose his senses from a shock of mind or terror, and the body discover no sign of disorder but that which the loss of mental intelligence and expression occasions, the animal and vital functions going on as usual; or, on the other hand, a limb may be wrenched off, and the man die in 12 hours, preserving his mind to the last. It must be admitted, however, that the *proper* irritability of the mind is seldom exhibited, comparatively with the sympathetic; possibly in strict fact never, but we must be content to reason from the evidence of our senses.

Secondly, As applied to Organs. If painful news take away appetite, or pinching a tendon occasion a sensation of sickness; if the sight of savoury food promote a secretion of the saliva, or worms in the intestinal canal produce a temporary blindness, the irritability of the affected organ is *sympathetic.*

The sympathy of the entire system with the severe forms of injury and disease, is illustrated by the phenomena of constitutional irritation, and of those fevers which are denominated symptomatic and hectic fevers.—P. 12.

The slightest cognisable form of constitutional irritation, are among those trivial but common ailments which, characterised by languor or uneasiness, rather than real indisposition, are commonly regarded as hypochondriacal. These affections most probably originate in a morbid sympathy with some local and temporary irritation.—P. 401.

Usually an excess of physical irritability in health is coupled with a similar condition of the mind, but this is not invariably the case. In disease, the existence of either speedily calls up the other; their mutual relations are more conspicuous, and their reciprocal agency is decidedly and often injuriously manifested. —P. 13.

We are sorry that we must here very abruptly cut short our analysis of this most important work, owing to the numerous articles which ought to have appeared in our last Number, and for which we are now obliged to find room. The abstract which we have given is the least interesting, being necessarily the most speculative and theoretical part of the investigation. What remains is purely practical; and, as it involves some of the most important views that have for a long time appeared on the subject of general therapeutics, we hope to meet with a ready excuse from our readers, if, in the next number, we devote a more than ordinary space for a review of the principles which Mr Travers has, in our opinion, so successfully inculcated.

To be continued.

A Case of Melanosis, with General Observations, illustrated by Coloured Engravings. By THOMAS FAWDINGTON, Member of the Royal College of Surgeons, London, and one of the Surgeons to the Manchester Lying-in Hospital. 8vo. pp. 50; 8 Lithographic Plates. London 1826.

THE scope of the elegant little work above is exactly conveyed by its title. Though it treats of a disease which must always be fatal, it also treats of one with the appearance of which every physician ought to be familiarly acquainted; for the practitioner who, at the opening of a body, could not recognise the phenomena of melanosis, would be considered by his professional brethren as a very ordinary person. This we owe, amongst other good things, to the rapid spread of medical knowledge; for melanosis is but a very recent acquaintance of physicians. We have not had an opportunity of seeing the collections of Professor J. Thomson of this place, which we are told are particularly rich in representations of melanosis; but we have seen some others, and can fairly vouch for the superiority of the figures given by Mr Fawdington. The drawings are the work of Mr J. A. Smith of Nottingham, and the engraving is by a Mr James of Manchester.

The letter-press, of course, is a mere history of the case; which, however, was one of more universal disease than in any other instance on record. The body was examined nine hours after death; and, except the nerves and bloodvessels, scarcely a tissue of the system was found free from its presence. Dr Henry analyzed the colouring matter, as below; and finds it, as Barruel had done before, to approach nearly to the nature of the colouring matter of blood.

" COLOURING MATTER OF MELANOSIS.

" 1st, By filtering through paper, much of the colouring matter remained on the paper, and the colour of what passed through was much less intense.

" 2d, Boiling does not destroy the colour, nor even when a little caustic potass has been added.

" 3d, It is not changed by acids, even when heated, except by nitric acid, which deprives it of its black colour, and turns it yellow.

" 4th, A stream of chlorine passed through the liquid destroys the black colour, and throws down light fawn-coloured flocculi.

" 5th, A few grains of corrosive sublimate stirred up with the fluid, precipitates the whole of the colouring matter, and leaves the supernatant liquid quite clear.

" 6th and 7th, Nitrate of mercury, and muriate of tin, produce the same effect, but more slowly.

" From these experiments it appears, that the black matter is a peculiar secretion, analogous in some properties, especially in the 5th, 6th, and 7th, to the colouring matter of the blood. It would be necessary, however, to repeat and extend the experiments on a larger quantity of the fluid, and in a more recent state, before any just conclusion can be deduced respecting its nature."

In the first plate, figures 1 and 2 represent the eye previous to extirpation. Plate ii. shews the melanosis, tubercles, and subcutaneous tubercles. Plate iii. exhibits the *tubera* generated upon the surface of the liver. Plate iv. is a section of the same viscus, shewing their internal character. Plate v. is a section of the kidney, even more decomposed than any other viscus except the liver. Plate vi. the ilium and mesentery dried. Plate vii. fig. 1. the heart, after maceration and immersion in spirits; fig.

2. a portion of the pancreas studded with melanose tubercles. Plate viii. fig. 1. illustrates the disease as it affects the lungs; fig. 2. represents the natural *black pulmonary matter*, which covers these organs in health, and which Mr F. is anxious to discriminate from melanosis. In the former, however, he tells us, the lung is always permeable, no hardness is perceptible to the finger, and the depth of colour is evidently owing to an *uncysted* concentration of the same bluish black material, which gives character to the other parts.

Our readers will forgive us, if we seem to have taken too much pains to acquaint them with the contents of the present volume. The price is not great; and, next to morbid dissection, it affords the best means, we know, of acquiring some idea of this fatal affection.

IV. PHARMACY.

Journal de Pharmacie et des Sciences Accessoires. Redigé par Messieurs E. J. Bouillon Lagrange, L. A. Planche, &c. &c. A Paris, 11^e Année 1825, 8vo. (in monthly numbers).

Continuing our examination of this Journal, we extract from the number for September the following "*Method of preparing the Hydriodate of Potass*, by M. Fau, *a pupil in Pharmacy at Montpellier*," because it appears to us the simplest which has yet been suggested.

"I dissolve the iodine," says M. Fau, "in five or six times its weight of distilled water, and drop into the solution very small quantities of hydrosulphuret of potass, frequently agitating the flask. Clouds form in the solution, sulphur separates, and the fluid afterwards becomes very limpid, which is a certain indication of the formation of the hydriodate of potass. As soon as the transparency of the fluid is disturbed, I add no more of the hydrosulphuret, but restore the transparency by the addition of a fresh portion of iodine. Having filtered the mixture, after it has remained for some time at rest, I evaporate it in a sand-bath, or, which is preferable, a vapour-bath, and preserve the product, a colourless saline substance, in a dry bottle."

Balsam of *Copiaiva* is frequently adulterated with castor oil. Several processes have been suggested for detecting this fraud; and, among others, M. Augustus Delondre, an extensive drug merchant in Paris, conceived the idea, that, by merely boiling the suspected balsam in water, this would be effected; and, in consequence of this opinion, he applied to M. Henry to make several experiments on the subject. In these experiments, the balsam employed was very pure, lighter than water, transparent, perfectly limpid, of an oleaginous consistence, and possessing, in a high degree, the odour, taste and colour, which characterise that substance. It was tested both with caustic soda and by ebullition. The pure balsam, mixed with solution of caustic soda, furnished a very fluid, whitish liquid, which, at the end of half an hour, separated into two distinct layers, the lowermost of which was a little muddy, and the uppermost composed entirely of pure balsam of copiaiva; but when the balsam was mixed with castor oil, in various proportions, a saponaceous compound was produced, which, at the end of twenty-four hours, became hard, and from which the balsam did not separate. When the proportions of the oil and balsam were equal, the soapy compound was white and hard; it was less so in both particulars, when one part of oil was mixed with two parts of balsam; the colour was yellowish-white, when the oil was in the proportions of one to four of the balsam; and the mass was semitransparent and soft, when these proportions were as one to six.' On boiling the pure balsam in water, for five hours, an almost inodorous resin, closely resembling boiled turpentine, and amounting to half the weight of the balsam employed, was produced; but when castor oil was mixed with the balsam, in equal quantities, the boiling in water produced a viscid, yellow, transparent, liquid matter, which floated on the distilled water, at a temperature of 10° Reaumur, (54°.5′ Fahr *.) The following are the general conclusions deduced from these experiments by M. Henry.

" *1st*, The employment of a solution or caustic soda, or prolonged boiling in water, readily discovers whether balsam of copiaiva be mixed with a fat oil.

" *2d*, The employment of the second of these methods affords results which nearly indicate the quantity of the oil mixed with the balsam; and the solution of caustic soda furnishes results which enable the proportion of oil to be still more nearly ascertained.

" *3d*, The nature of the results obtained by the boiling in water depends on the union of the oil with the resinous matter, analogous to the boiled turpentine obtained by the boiling of the balsam alone.

" *4th*, These processes are not sufficient to discover the kind of fat oil which may be mixed with the balsam of copiaiva; but, hitherto, castor oil is that which has been employed."

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* When two parts of balsam, and one of oil, were treated in the same manner, the viscid matter produced was thicker, less transparent, and rather of greater specific gravity than distilled water; with four parts of balsam it was soft, thicker than turpentine, semi-transparent, capable of being rolled between moistened fingers; and, by exposure to the air, it acquired a pearl aspect; and with six parts of balsam, the mass furnished, after twelve hours' boiling, closely resembled turpentine; but it did not acquire the hardness and fragility of the matter obtained, by boiling the copiaiva alone.

This number of the Journal contains, also, a valuable paper "*On the action of Acids on some Saline Solutions,*" the joint production of M. Soubeiran and M. Henry *junior*; but, as it is more of a chemical than a pharmaceutical nature, and involves an hypothesis, we do not consider ourselves called upon to analyse it; and mention it merely to direct to it the attention of such of our readers as are interested in such inquiries.

The number for October contains more matter for our purpose. The first article is entitled,

"*Chemical examination of a Bark known by the name of* Quina-bicolore, *extracted from a Memoir read at the Section de Pharmacie, by MM. Pelletier and Petroz, and notes upon the same subject, by M. Vauquelin.*"

It appears, that the bark mentioned in this article, under the name of Quina bicolore, has been, for some time past, employed in the north of Italy, where it is regarded by Professor Brera as a variety of cinchonia, although, in its external characters, it more closely resembles cusparia bark. The presence or absence of quinia or cinchonia might have decided the question; but, as opinions differed on this point in Italy, M. Brera transmitted some specimens of the bark to Vauquelin for analysis, through Dr Girard, who, at the same time, transmitted specimens also to the authors of the essay now under consideration. The two analyses are separately detailed.

"M. Pelletier and Petroz having received a small portion of this bark from M. Humboldt, previously to receiving M. Brera's specimens, subjected its decoction to comparative trials with the decoctions of the barks cinchona lanifolia, and of cusparia. The decoction of quina bicolore became turbid on cooling, but resembled more in colour the decoction of cusparia than that of the cinchona bark; its odour was particular, less disagreeable than that of cusparia; but devoid of the aroma of the decoction of cinchona.

The three decoctions were subjected to the action of the following reagents:

"*Emetic Tartar.*—The quina bicolore whitens the solution of tartar emetic, and causes a light flocculent precipitate; cusparia produces the same effect; cinchona a more abundant precipitate of a dirty white colour.

"*Sulphate of Iron.*—The quina bicolore and cuspuria yield, with sulphate of iron, a green, light precipitate; the cinchona a bluish precipitate.

"*Gelatine.*—The precipitate with the quina bicolore and cusparia is light, and less copious than that thrown down in the decoction of cinchona.

"*Infusion of Galls* forms in the decoctions of the three barks copious precipitates, soluble in alcohol, characters which all the vegetable alkalies, and some of the bitter principles, present. This property is not peculiar to quinia and cinchonia.

"*Subcarbonate of Ammonia* produces a greyish precipitate in the decoction of cinchona bark; but affords none with the decoctions of quina bicolore and of cusparia bark."

These experiments being sufficient to prove that the quina bicolore does not belong to the genus cinchona, MM. Pelletier and Petroz next demonstrated that it contained neither quina nor cinchonia; and, having received a fresh quantity of the bark from M. Brera, they subjected it to a regular analysis. Treated with sulphuric ether, they obtained a greenish-yellow matter, composed of a fatty substance, and a small quantity of chlorophylle. The bark which had been thus treated was next repeatedly subjected to the action of alcohol, and yielded saturated tinctures, which were very bitter, and remained clear, when cooled. They afforded, when evaporated, a very bitter extract, which was almost entirely soluble in water, leaving, however, a resinous matter, which, when washed, was much less bitter than the aqueous solution. This solution was very acrid, and yielded precipitates with galls, and the salts of lead, but with none of the other metallic solutions. Treated with acetate of lead, the acid was separated, and appeared to be the malic. M. Pelletier and Petroz, continuing their analysis, found, that the bitter matter, when separately obtained, possessed the following properties: Its colour is a very pale yellow, its taste extremely bitter, and it dissolves in alcohol and in water; it is precipitated only by the acetate of lead among all the metallic salts used in vegetable analysis. The alkalies do precipitate it; concentrated nitric acid destroys it, giving traces of oxalic acid, and strong sulphuric acid chars it. From which characters they considered it to be the *colocynthine* described by Vauquelin, or at least to have some analogy with it. A portion of the bark which had been treated with alcohol was next treated with cold water, and afforded a brownish gummy matter, which was still bitter. Boiling water extracted more of this gummy matter, which, on being calcined, furnished much lime, which probably was united to the malic acid in the bark. Iodine detected traces of starch in the solution. The ligneous matter, exhausted by water, was incinerated, and the ashes, which were small in quantity, found to consist of lime, silica and potass, combined with the carbonic, sulphuric, and hydrochloric acids.

"It follows from this analysis, that the quina bicolore (which is apparently not a cinchona) contains, besides its woody fibre, a resinous principle, a bitter matter analogous to colocynthine, and which appears to be its active principle, gum, malate of lime, a little starch, and some salts of potass."

In the analysis by Vauquelin, which occupies the second part of this memoir, that chemist found, that the alcoholic extract greatly resembles that obtained from the Solanum *pseudo-quina*; that it is neither acid nor alkaline, nor is the transparency of its aqueous solution effected by ammonia. It yielded, when treated with water, an ochreous brown matter, very divisible into flakes, which became deeper coloured on being dried; was pulverulent, softened by heat, and, on being burnt, gave out a yellow smoke, the odour of which was not disagreeable; it was insoluble at a low temperature, but, in a high temperature, melted and floated in the water without dissolving in it, although it slightly coloured the water and rendered it bitter. Thence he regarded this matter as a kind of resin; and, having separated it from the soluble part of the extract, he submitted this to the action of the following reagents.

" 1. With the infusion of galls it yielded a scanty, yellowish-white, flocculent precipitate.

" 2. With acetate of lead, an abundant yellow precipitate.

" 3. With solution of gold, a copious yellow precipitate, reducing itself after some time to a plate of metallic gold.

" 4. With the chlorine, a white, flocculent precipitate.

" 5. With sulphate of iron, a deep green precipitate.

" 6. With emetic tartar, a scanty, white precipitate.

" 7. With the acids and alkalies, no evident precipitate; only some light white flocculi with barytes.

" A gramme of alcoholic extract, burnt in a platinum crucible, furnished a centigramme of carbonaceous and alkaline residue; the quantity of alkali was scarcely half a centigramme."

The bark which had been treated with alcohol being subsequently submitted to the action of boiling water, the decoction, when evaporated, yielded an extract which was still bitter, and which, when boiled with alcohol, both coloured the spirit and rendered it bitter. A gramme of this extract, burnt in a platinum crucible, left cinders which contained four centigrammes of subcarbonate of potass, mixed with a little sulphate and muriate of the same base, besides carbonate of lime and phosphate of lime. Heated in a glass tube, surrounded with litmus paper at the mouth, this extract furnished a vapour, which heightened the blue colour; an effect which indicated the presence of some azotic matter, probably furnished by the ammonia acted on by heat. Another portion of this extract, treated with nitric acid, presented indications of an animal matter, and " particularly some of the bitter matter of Welther." Oxalic acid in crystals was also obtained; and, on saturating the mother waters with carbonate of potass, oxalate of lime was procured.

But the most singular product of this analysis was the carbonate of lime, being the second instance only that it has been detected in vegetables.

From Vauquelin's analysis, it appeared that 100 grai ns of quina bicolore contain,

" Sixteen grammes of matter soluble in alcohol, which is composed of 14 grammes, 65 cents, of bitter extract, and 35 grammes of resin.

" 2. Four grammes of animal mucous extract, insoluble in alcohol.

" 3. Oxalate of lime, combined with an animal matter insoluble in water.

" 4. Malate of lime and of potass.

" 5. Finally, carbonate of lime in the proportion of 1.87 in 100 parts of the bark.

Vauquelin found the closest analogy between this bark and that of the Solanum *pseudo-quina*; but he nevertheless does not consider that he is authorised in supposing that they are the production of the same plant. He, however, adds: " I may with certainty affirm, that, if the solanum *pseudo-quina* possess febrifuge properties, as travellers assure us is the case, the quina bicolore ought to possess them in the same degree." The paper concludes with the following note upon the agreement of the two analysis by M. Pelletier.

" However slightly the two analysis of the quina bicolore are compared, a great accerolance in the principal parts will be observed.

" The absence of quinia and cinchonia is one of the facts. The bitter and presumed active principle has presented the same characters to M. Vauquelin et MM. Pelletier and Petroz. M. Vauquelin compares it to that of the pseudo-quina, and MM. Pelletier and Petroz to colocynthine; but in his Memoir on the Pseudo-quina, M. Vauquelin compares the bitter principle of that plant to that of thé coloquintida, and found them closely to resemble in many particulars.

" The bitter principle of quina bicolore is accompanied with a resinous matter, from which it is separated with difficulty. This resinous matter is described in both analyses.

" The presence of malic acid, partly free and partly saturated with lime, is stated in both analyses.

" The quina bicolore, essayed with ether and alcohol, yields a mucous matter, the characters of which are a little striking, is that which MM. Pelletier and Petroz have named gummy matter. M. Vauquelin, restricting the name of gummy matter to the vegetable substance, which affords the muric acid by nitric aeid, designates that matter under the name of animal matter, on account of the azote which it contains; nevertheless it is evident that it is the same matter in both analyses.

" M. Vauquelin has discovered the presence of carbonate of lime in this bark; which is the second example of carbonate of lime being formed in vegetables. This very interesting fact had escaped MM. Pelletier and Petroz, but alters in nothing the identity of the two analyses, as far as relates to the nature of the vegetable substances which distinguish them."

This number of the Journal contains also a notice on a curious work of MM. Henry *junior* and Garrot, *upon the State of the Sulphur in Mustard Seeds.* These chemists prove, "After the labours of Margraff, Baumé, MM. Deyeux, Thibiere, Robiquet, &c., that the fixed oil of mustard contains a reddish, very acid, sharp, bitter substance, having the odour of the antiscorbutic plants. This substance forms pearly needles on the sides of the vessels: it is decomposed in the fire, and affords, besides charcoal, carbonic acid gas, and hydrosulphate of ammonia. The sulphur which it contains is neither in a free state, nor in that of sulphuretted hydrogen. This matter reddens strongly the salts of peroxide of iron, in the manner of the muconic acid. It is a new acid, which has been named by the authors sulfo-sinapic, precipitating white the solutions of silver of lead; chlorine separates a little sulphur from it, and forms sulphuric acid. Washing the oil of mustard with alcohol separates the acid freed from the reddish matter, which colours it. It crystallizes in shining plates. One hundred parts of it contain 49.5 of carbon, 8.3 of hydrogen, 17.33 of sulphur, 12.96 of azote, and 11.91 of oxygen. Besides this acid and the red matter, alcohol takes up also from the oil of mustard a fat pearly matter, analogous to cetine, or rather to cholesterine and to ethal, fusible at 120°, and unalterable by potass.

"M. Planche remarks, that the vinegar does not increase the action of the sinapism, which appears to be produced by the volatile oil."

The next paper which we are called upon to notice is by MM. Boullay and Boutron Charlard, *on the Chemical Examination of the Tonka Bean.* We do not think the details of this paper of sufficient interest to be transferred to our pages; and, therefore, content ourselves with copying the following results of the experiments of these chemists on this vegetable production:—

"1. A fat saponifiable matter, formed of chlorine and stearine.

"2. A crystallizable matter, odorous, and possessing many characters of the volatile oils, and which, far from being benzoic acid, is, as M. Guibourt supposed, a peculiar vegetable principle, for which we will adopt the name of *Coumarine,* or rather *Coumarin.*

"3. A saccharine, fermentable matter.

"4. Free malic acid.

"5. Acidulous malate of lime.

"6. Gum.

"7. Starch.

"8. An ammoniacal salt.

"9. Vegetable fibre."

The narcotic properties of *Lactucarium*, or, as it is now termed by the French, *Thridace*, so closely resemble those of opium, that many writers on the Materia Medica have regarded it as depending on some compound of morphia. To determine this point, thridace has been analysed by M. Dublanc *junior*, a member of the Pharmaceutical Society of Paris, and a notice of his observations is inserted in the number of the Journal now before us.

The thridace employed in the experiments of M. Dublanc, was prepared by expressing the juice from the stalk of Lactuca sativa, and evaporating it to the consistence of an extract.

Thirty grains of thridace were treated first with cold alcohol, and afterwards with hot, until the spirit ceased to act upon it: there remained seven grains and a half of matter resembling an extract, which rapidly attracted moisture from the air, although it contained no deliquescent salts. The alcoholic tinctures having been mixed together, filtered and evaporated in a vapour-bath, yielded twenty-two grains and a half of an extract, possessing all the properties of thridace, its acidity, sweetness, and bitterness, which were not found in the matter insoluble in the alcohol.

The alcoholic extract being dissolved in distilled water, the filtered solution was next treated with an excess of pure calcined magnesia. This operation was repeated several times on the same solution; and the magnesia afterwards, several times also, submitted to the action of boiling alcohol. On evaporating the alcohol, a white circle only remained on the bottom of the capsule; and this being tested by nitric acid, afforded no indications of the presence of morphia.

The solution treated with the magnesia, and filtered, was also tested with ammonia; but after two days had elapsed, although a precipitate was procured, yet it was so small as scarcely to be collected, and dissolved without alteration in nitric acid, from which, however, ammonia again separated it, after the lapse of the same time. From these experiments, it is evident that no morphia is contained in thridace; but, as M. Dublanc justly remarks, the parts only of this extract which are soluble in alcohol, being active, the strength of thridace is increased in the proportion of one to three, by depriving it of the matter insoluble in alcohol.

PART III.

MEDICAL INTELLIGENCE, FOREIGN AND DOMESTIC.

I. PRACTICE OF MEDICINE.

Influence of Marshes upon the different ages of Man.

M. Villermé read a paper, in the Royal Academy of Medicine, upon the influence of marshes on different ages. He asserted, that the influence of marshes is greater upon children from one to ten years of age, than upon any other age; and, in proof of this, he cited the comparative number of deaths which took place, at different ages, in the swampy cantons of France, and in those which are without marshes. While, in the departments which are not marshy, the months of August, September, and October, are those which are the least attended with deaths, these months, in marshy countries, are distinguished by the greatest number; and again, while, in the departments not marshy, the proportion of children in the total number of deaths, is nearly the same during all the months in the year; in the marshy departments, on the contrary, this proportion is greatly augmented during the months in which the influence of the marshes prevails; thus it appears, that the increase of mortality which is observed at that time, takes place, above all, at the expence of childhood. For example, in 1821, in the departments of the Ain, of Lower Charente, of the Gard, of the Gironde, of Herault, of the mouths of the Rhone, and of the Var, all marshy countries, there were, in those districts, during the months of January, February, and March, 16,898 deaths, among which were those of 5,248 children under four years of age; and, in the months of August, September, and October, in the same year, the number of deaths in these same departments was 21,677, of which 10,628 were children. The fifteen last years, says M. Villermé, offer similar results, with the exception of 1816, a year in which the deaths were more numerous in the winter months than in those of the summer; but this exception only serves to confirm the influence attributed to marshy emanations upon the mortality; for, in 1816, as is known, there was much rain; the result of which was, that the marshy grounds remained all the year submerged, and thus the summer became more healthy, since there were produced no marshy emanations.

This paper of M. Villermé gave rise to much discussion. His views were opposed by M. Desportes and M. Kerauden, the latter of whom conceived that there might be some source of error in the calculation, as it was possible that the increase of mortality observed in the months of August, September, and October, might be owing to other causes besides the influence of marshes. But M. Guersent maintained, that children under three years of age were more liable than at any other period of life to the effects of all emanations whatever; and he adduced, in confirmation of his opinion, the result of observations which he had made at the Hôpital des Enfans.

Note by the Editors.

It seems strange to us, that any opposition could have been made to this effect of miasmatick effluvium upon the life of children. The venerable and acute Dr Robert Jackson had remarked, during the American war of independence, that the natives of Petersburgh, an exquisitely marshy town in Virginia, seldom arrived at maturity, and that if this happened, they exhibited all the characters of mature old age at 24! We were, at first, naturally inclined to consider this an exaggerated statement, but, from its obvious importance, were induced to ascertain its title to credit, by a series of inquiries transmitted through our intelligent friend Dr De Kay of New York. The answers to these, printed below, as returned from Dr Allen, an able practitioner on the spot, abundantly confirm the views of M. Villermé:

" *Q.* Whether Petersburgh[*] is considered very healthy?—*A.* Petersburgh is situated on the banks of the sluggish stream of the river Appomatox, flat and marshy, and surrounded by hills; was formerly very unhealthy. Now that the marshes and swamps are drained, and filled up, the inhabitants enjoy much better health; however, they are not exempt from fever, both intermittent and remittent, particularly in the autumn.

Q. Whether persons who have been born, and lived there all their lives, reach the same degree of long life as in other places?—*A.* It is almost impossible to give a satisfactory answer to this question; since Petersburgh could scarcely be called a town eighty years ago; and even thirty years ago *it was so unhealthy that children could not be reared without the greatest difficulty.* As Petersburgh now is, I am not aware that the proportion of deaths to the births be much greater than towns enjoying a better character for health. Temperate persons might reach the years of sixty-six to seventy-five.

Q. Whether consumption is as common in Petersburgh as elsewhere?—*A.* I think as many cases to the population may occur as in any part of the United States; as the lower order of inhabitants use spiritous liquors to excess, particularly whisky. This is not confined to Petersburgh alone, but will extend and apply throughout the state of Virginia.

It is worthy of remark, that, in proportion as the lands are cleared of their woods, and swamps, marches, &c. are drained, the health of the country improves, and even the characters of diseases undergo a change.

I have known a healthy situation rendered very unhealthy by the construction of a mill-dam in the vicinity, particularly if the body of water be extensive and shallow. If its space be contracted and deep, the same effect is not produced."

Observations upon the Local Prevalence of Idiotism, and its connection with Goitre.

By Kinder Wood, Surgeon. (From the Transactions of the Literary and Philosophical Society of Manchester.)

The existence of an endemic idiotism in parts of the globe far distant from each other, has been noticed by various travellers; but has attracted more particular attention in certain parts of the Alps, on account of its greater prevalence and more decided character in that region. In Switzerland, France, Germany, and Italy, as well as in this country, the affection is known by the term cretinism; but the appellation is more particularly esteemed to apply to the idiots of the Alps, among whom it has originated. It has been observed in the Pyrenees, among the mountains in the department of the Gard in France; in the Alps, and the Appenines; on the Tartarian side of the Chinese wall; and in the mountains of Bootan in the East, as well as in a long range of marshy wood at their foot.

In a part of the township of Oldham, called Sholver, my attention was attracted to the number of idiots. From Sholver-Moor, along the face of the hill, following its curvature at the Dog-hill to Crompton, and in the immediate neighbourhood, being an extent of about three miles, there will be found, or have lately existed, a greater number of these individuals, than in any other part of the country. The ground faces nearly west, is excessively exposed to the winds which cross the Irish Channel, and sweep over the flat country loaded with vapour. The lower part of the hill is defended from these winds by Werneth and Oldham Edge; but as these high grounds decline or terminate to the north, they form with High-Crompton a trough or hollow, giving a direction to the currents, which accumulating, rush up the valley over Royton and Shaw, to be intercepted by the hill we speak of, against which they break with considerable force. The ride along this hill is the most bleak and cold of any in the neighbourhood: the country is completely unsheltered by trees or hedge rows; the soil is thinly scattered over the surface, and the herbage scanty. At the foot of this high ground is a long tract of moss, which has lessened of late years, as an increasing population has made land more valuable; from this marshy ground, flow streams which contribute to form the sources of the Medlock, the Irk, and the Beale.

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[*] At this time Morse (Amer. Geogr,) writes that it contains 300 houses, in two divisions, the one of which, situated upon a clay, cold soil, is very dirty; the other upon a plain of sand or loam. " It is very unhealthy."

List taken in 1817.

James Bradley, Sholver-moor, an idiot, about eight years of age.

Joseph Kershaw's son, Sholver-slack, an idiot, aged about nine years.

Robert Winterbottom, Roebukklow, an idiot, about thirty years of age. As these individuals are frequently deaf and dumb, I may also remark, that a son of John Horsefield, of Roebucklow, is deaf and dumb; amongst this latter class of objects it is often difficult to ascertain whether diminished intellect is the effect of defective education, or irregular evolution of the brain.

John Shaw, near Doghill, has buried two idiotic children, the oldest lived to be twelve or fourteen years of age.

James Robishaw has also buried two idiotic children.

John Hague, an idiot, in the same neighbourhood, died a few years since, more than twenty years old.

Robert Dransfield, Old-bank, is an idiot, about forty years old: Annice Dransfield, his sister, died a few years since: Thomas Dransfield, his brother, died, aged about twenty-five years, both idiots.

——— Crossley, Shore-edge, has three sons idiots, the youngest, though deaf and dumb, possesses intellect to a certain extent. The oldest is the most absolute idiot I have ever seen.

Anne Crompton, Wood-end, has a child with defective intellect.

James Dawson, Green-hill, is an idiot, about thirty years old.

Jacob Platt, Dog-hill, had an idiotic son, who died about thirty years old.

——— Cheetham, Crompton, has an idiotic son.

John Higginbottom, at Beswicks, buried a daughter, an idiot, aged about nineteen.

I must observe of this list, that there are more male than female idiots; the deficiency of intellect varies in its degree, so that we have the complete and the partial idiot; several families have produced two or three of these individuals; they are a class of beings generally of a short life; and, on this account, many slip into an early grave without being noticed. As this list is composed chiefly of individuals who had overcome the serious diseases of infancy and childhood, it is certain that a more careful inquiry would extend it considerably, by bringing forward those who have escaped popular observation; it is, however, sufficiently large to ascertain the fact.

In the Alps and the Appenines; in the Pyrenees and the Cevennes; in Tartary and in Bootan; and generally where idiotism is endemic, that enlargement of the neck termed goitre, consisting of tumour of the thyroid gland, is found to prevail. This tumour is found in many parts of England; it is frequently seen in the neighbourhood where the intellectual feebleness now spoke of is found. It is observed in Warwickshire, Norfolk, Lancashire, and more especially upon the hills in the county of Derby; its prevalence in the last named district is so great, that it has acquired the name of Derbyshire Neck, and is so known throughout England. Pilkington, in his view of Derbyshire, informs us, that, in the little village of Duffield, there existed no less than fifty goitrous families. It is worthy of remark, that the idiotism now under consideration exists upon a part of the same range of hills; a chain which, commencing in Staffordshire, runs through Derbyshire, Yorkshire, Lancashire, Westmoreland, and Cumberland.

The goitrous tumour never attains the same magnitude in England which it does in some other countries. In the Vallais, it is stated by Coxe to be occasionally the size of a peck loaf, and by Watkins, in his travels through Switzerland, as hanging half way down the body. Captain Turner, in his embassy to Thibet, describes it as forming immediately under the chin, extending from ear to ear, and hanging from the throat down upon the breast. Marsden also describes it in Sumatra, as hanging from the neck the size of quart bottles. When the tumour is found thus large and combined with absolute idiocy, it never fails to be described by the traveller with the utmost horror and disgust; and when the situation of the thyroid gland is considered, and its connection with the larynx and trachea, it is surprising that death by suffocation is not produced long before so great a magnitude is attained.

The endemic, which is the subject of this paper, has not, so far as I know, been connected with goitre in any of the individuals, or their families, although the goitrous tumour is frequently met with in the neighbourhood, particularly in young females, nor have these two affections been hitherto found connected in England, except by accident. It ought to be stated, that, in the short account given by the writer of the article Cretin in Ree's Cyclopedia, we are told, that, some years ago, a female Cretin, of the name of Sothern, resided at Hull, and another at Plymouth. The only case in which I have seen defect, in any part of the nervous system conjoined with goitre, is in a young female at Hollinwood, who is deaf and dumb, with very considerable fulness of the neck.

Goitre is found in many parts of England without any endemic idiotism. We are again told by Coxe, that goitrous individuals are sometimes the offspring of healthy parents, whose other children are properly organized, and who are themselves free from guttural swellings. I know several goitrous females married, whose progeny are properly organized and intelligent; and I also know two goitrous males married, whose families are of sound mind.

If, then, numerous cases of idiotism occur without goitre, and goitre without idiotism; if goitrous individuals produce a progeny having sound intellect; and if idiots are frequently the progeny of parties not idiotic or goitrous, as the endemic before us, it must be allowed that the alleged connection betwixt these two affections so often intimated by travellers, and which Foderé has endeavoured to establish, must be considered as more than doubtful and uncertain.

Considering the connection of these affections in the most simple point of view, as two distinct endemics appearing in the same local situation, it may still be asked, How their frequent conjunction in the same individual is to be accounted for? In this circumstance there is nothing new, nor at all contrary to our experience of the co-existence of disease; it only seems to shew an intimate connection betwixt their causes, if it does not shew them to be the same, whilst the effect is influenced by the habits, tendencies, and pre-dispositions of the individual exposed to their action; it is this absence of predisposition which enables so many to remain in perfect health, though exposed during a long life to causes, which, in other habits, produce the most injurious consequences.

It might be thought, that physical causes, producing an influence thus powerful over the development of the mind and the body, could be easily ascertained; but this is not the case. Many of the ascribed causes are inadequate to the effect, or must produce it more generally; whilst others are at variance with well known facts.

By actual observation and experiment, Foderé has shewn, that goitre and cretinism are most frequent in the deep Alpine valleys, washed by torrents, having a marshy bottom and exuberant vegetation: he examined the atmosphere of these valleys with an hygrometer, and uniformly found the number of these unfortunates to be in proportion to the humidity of the atmosphere in which they resided. The valleys of the Pyrenees, and the Appenines, present the same features, and are attended with the same consequences. Sir George Staunton remarks, that the high grounds in Tartary, where he noticed similar appearances, presented many alpine features; and Turner, in his embassy to Thibet, more careful in his description, not only found these affections in the mountains of Bootan, but extensively in the woody belt which encircles their foot to a depth of from ten to twenty miles, which forest abounds with marshes, from which originate the rivers flowing to the south. Pilkington also informs us, that in Derbyshire, where goitre prevails, he perceives nothing peculiar but high lands, high winds, and heavy rains. Perlac, in Hungary, where Bright found goitre, lies in the low land betwixt two large rivers; and we are further told, that the Hungarian peasantry have their crops frequently ruined by heavy storms of wind and rain. The statement before made of the ground where the idiots we speak of are found, shews analogous features; it is exposed to the accumulated force of the west and south-west winds, which prevail the most and are frequently loaded with moisture; whilst a tract of marsh lies at its foot, giving rise to three streams ultimately falling into the Irwell.

These affections have been thought peculiar to hilly and mountainous districts; and it is true they are most frequently seen in such situations; in some of the instances alluded to, they are found in low grounds; but in all countries where they have been noticed, they have been attended with the concurring circumstance of a great humidity of the atmosphere.

When circumstances thus uniform are attended with appearances thus similar, we cannot withhold our assent from the opinion, that they stand in the relation of cause and effect to each other. But of the manner in which this influence is exerted upon the constitution, we are entirely ignorant; and we can only further contemplate it in its effects. The dissection of the brain of young idiots might lead to some earlier steps in the investigation; but I am not aware that this has been attempted.

In examining the heads of these individuals, we find them present a configuration very similar to that of children labouring under chronic hydrocephalus, and also to the heads of children having early and large evolution of the brain; indeed, it seems to be actually the case in simple idiotism and cretinism, that the cerebrum evolves itself prematurely; hence we find the idiot possessing a large head, with a small face, frequently a flat crown, with large frontal and parietal protuberances, all of them circumstances which occur in the hydrocephalic, and in children possessing premature mental powers.

Dr Reeve, in the 5th vol. of the Edinburgh Medical and Surgical Journal, has given a drawing of the head of a cretin, who died, aged thirty years, and has noticed some curious facts; the anterior fontanelle was not closed; the os occipitis was very large, with numerous ossa triquetra in the lambdoid suture; the temporal bones were imperfect, and the second set of teeth not out of their sockets. In the face, the maxillary, cheek, and nasal bones were not completed. The head was very large, and the face small, resembling the skull of an adult upon the face of a child. This statement shews defective and irregular ossification of the bones of the head; and it is curious to observe in this, as well as many other instances, how very much bony formation is impeded, by defective organization of the brain.

When the inside of the skull has been viewed, equal defects have been found at the base, the large holes situated betwixt the cuneiform process of the occipital, and the petrous portion of the temporal bones, through which pass the eighth pair of nerves, the accessory nerves, and the blood from the lateral sinuses were observed diminished in size; the cuneiform process was void of its natural concavity; and that portion of the occipital bone which contains the cerebellum was diminished nearly two-thirds in size. All the circumstances enumerated, lead to the opinion that the cerebrum is prematurely and largely developed, whilst the cerebellum and medulla oblongata are lessened and defective in their organization.

It has been thought that the formation of the cranium influenced the development of the brain; but there are numerous facts which shew, that the formation of the cranium is completely modified by the changes which the internal organs undergo. It is to allow this adaptation of the coverings to the part covered, which constitutes a necessity for the sutures; and it is owing to them that various changes of configuration take place in childhood and youth without destroying life, which could not occur after the sutures are closed.

The contracted state of the holes at the base of the cranium, and particularly the openings through which the blood passes from the lateral sinuses, seem to shew, that the nerves transmitted through them are small; and, therefore, that the brain is in a state of feeble action: the same irregularity shews a diminished supply of blood, because the holes for the exit of blood must correspond to those for its entrance, otherwise such congestion would take place in early life as to destroy the individual so formed, either by the rupture of a vessel, or by the effusion of water into the ventricles, or upon the surface of the brain.

In considering these great defects in the conformation of the brain, it is no wonder that we see the intellect wholly or partially destroyed, whilst the vital and animal functions are carried on in a very imperfect manner. Defective organization of the brain is attended with irregular evolutions and powers in various other parts of the animal economy; and the idiot, though well formed in infancy and childhood, becomes deformed, and, in many instances, distorted, as he approaches to puberty; and I apprehend, that it will be generally found, in examining the gradations of idiotism, that the defect of figure and the defect of intellect correspond with each other.

Facts relating to the History and Treatment of Goitres, and its influence on the History of Goitres. By M. Roulin, D. M. P. dated Santa Fe de Bogota, May 1825.—Abstracted from the Gazette de Santé, December 25, 1825.

When I arrived in America I found goitres so abundant, that they necessarily engaged my attention. I sought to apply the hypothesis which, in Europe, possessed some credit; but I was obliged to renounce them all in proportion as I examined the disease in different localities. Thus at Mariquita, I was unable to refer the origin of the goitres to the stagnant air of valleys, because I observed them in a vast plain, swept incessantly by the breaking upon it of the Magdalena. If I were desirous to attribute the goitres to humidity and heat, why would they be found in such great abundance at Pila, which is between 6000 and 7000 feet (2000 metres) of elevation above the level of the sea? If I would refer them to a lymphatic temperament, How is it that, in more than a thousand goitres which I have observed, I have not been able to find a single one in an Indian of pure race; while among the negroes (contrary to the opinion adopted in Europe, which has supposed them to be exempt from the disease) as many instances of this affection are manifested as among the whites?

Although goitres may be sometimes observed in plains, it is always when such plains are situated near large mountains; and the influence of this last circumstance appears to be such, that it is not even destroyed by the neighbourhood of the sea, as I have remarked in the inhabitants of the Guaira. As to the elevation at which this affection is found, I have already observed, that, at the Guana, which is elevated about 660 feet (200 metres) above the level of the sea, goitres are as abundant as in the lowest valleys. At Santa-Fe, about 8600 feet (2600 metres) in elevation, it is true that the goitres are still fewer in number, but there is still less of them at Guaduar, which is only about 5700 feet (1700 metres) in height, and is situated at the bottom of a basin, which, for the whole of its outlet, has nothing more than a narrow and tortuous valley.

Experience has shewn, that, when a young person, who may have attained the age of puberty, acquires a goitre in a country where the disease is endemic, if he remove to a place which is exempt from it, he is commonly cured without the assistance of any other remedy, and the more recent the affection is, so much the greater is the chance of cure.

I still thought that this disease was almost always hereditary, and that having been introduced by the arrival of certain goitres, it had thus progressively spread. But this did not explain how strangers, who had established themselves at Mariquita, likewise, in five or six years, took a goitre,—a fact of which I had, under my own observation, numerous proofs. The city of Honda was in the same situation as Mariquita, only the invasion of the goitre seemed to be there still more recent.

Note by the Editors.

Our readers cannot fail to observe, that the two previous papers are in some degree at variance with each other. The cause of goitre is, at present, attracting a considerable degree of attention on the Continent; and in a discussion on the subject, which lately took place at the Royal Institute, M. Zambroni was quoted, who had observed, that, in travelling through the Pyrenees, no goitres were to be seen in the valleys which were composed of strata of granite, and that they were only to be met with in those which were formed of the strata of magnesia. But this observation leads to little or nothing. The rocks of Derbyshire, which numerous goitrous patients inhabit, are not composed of strata of magnesia, but of pure limestone, while the rocks in the vicinity of Oldham, in Lancashire, having many affected with goitres, are neither composed of strata of magnesia nor even of limestone, but of siliceous rocks of sandstone. Again, Magendie conceived that the swelling of the thyroid gland is to be ascribed to the wretchedness of the people among whom it prevails, adding that the disease becomes less frequent in the Pyrenees, in proportion as the condition of the inhabitants is improved. Certainly we believe that, in a few instances, poverty may have much effect as a *conspiring cause* in inducing the disease; but a more proximate cause still remains the great desideratum. We could even produce families in Derbyshire, far out of the reach of poverty, where goitre prevails, who are as well fed, and as regular and cleanly in their habits, as any householders in his Majesty's dominions. We must consider, then, that the question, on the origin of goitres, is still veiled in very great obscurity. No one, however, has hitherto done more for the subject than our friend Mr Kinder Wood, and we are not without hopes that he will consider his researches as by no means terminated, but that he will still keep a vigilant eye on all the circumstances which are, more or less, connected with the origin of the affection.

Administration of Iodine in the treatment of Goitres. By M. Roulin.

M. Roulin (in the Gazette de Santé, December 25, 1825.) has published an interesting circumstance in the history of goitre, as it occurs at Mariquita, in America, which suggests very useful hints in the administration of this powerful medicine.

When I was at Mariquita, I learned, with certainty, that this city, which at present exhibited to me a sad spectacle of misery, and of the degradation of the human species, was, fifty years before, in the time of its prosperity, famous for the beauty of its female inhabitants, and that the goitre there was comparatively unknown. I was at first tempted to suppose, that the bad nourishment and neglect of cleanliness which followed the decay of this city, were the cause of this change; but, on reflecting that, in other places, I had seen the disease no less frequent, and proportionally the same among the rich as among the poor, I conceived that I was bound to renounce this opinion.

Having been compelled to abandon the two causes which I had suspected, I did not cease in my endeavours to discover the explanation of a fact so singular. At last I thought I had found it. I learned that a liquid, named salt acid (aceyte de sal), employed in goitre, was obtained from a salt in the province of Antioque. I understood that this salt had been a long time tried in the province of Mariquita, and that, for a long series of years, a substitute had been found for it in the salt of Zipaquira. I was informed that the salt-acid was obtained by suspending the salt in a bag, after having obtained it by evaporation, and in collecting the liquor, which begins to fall drop by drop. I easily imagined that the fluid after this operation, might still retain in it a portion of soluble salt, sufficient to resist the development of the goitre. Provided this explanation be admitted, it is necessary at first to prove the efficacy of the salt-acid, of which I convinced myself by two direct experiments, and by many other cases of which I was not a witness, but upon which I had very circumstantial details.

Upon my return from Santa Fe, I engaged my friend M. Boussingault to undertake an analysis of the salt-acid. He had, indeed, before intended it. He did it, and there discovered iodine in a very remarkable quantity; whilst, in the salt of Zepaquira, he could not discover a trace of this substance.

The analysis of the salt-acid did not leave me with a single motive to restrain the trials which I had undertaken, with effects of chlorine in the same disease. M. Boussingault, in fact, had found that it existed in this liquid, in the free state of the hydrochloric acid, and perhaps its action might favour that of iodine.

I shall now conclude by a single remark. As we are not able to separate the active principles of many medicines, we are too much disposed to give them in an insulated form. This method may be attended with serious inconveniences; and I think, for example, that if the employment of iodine is not very generally admitted, it is because the too great activity of its effects on the stomach are apprehended. I have not seen that the salt-acid is liable to the same dangers. It may then, perhaps, be of advantage to imitate the composition of this salt, and to introduce the iodine along with other aliments.

We have again to record another case, published by Dr Reynaud, in the Journal Complementaire, relative to the administration of iodine, which certainly indicates, not only that its efficacy is far from being proportionate to the quantity in which it is given, but that its operation in reducing goitrous tumours is extremely gradual. Dr Reynaud's patient had been, during two months, put on a course of iodine, taking from ten to twenty-four drops of the tincture three times aday, without any change in the volume of the tumour having been manifested. He ceased, during six months, to make use of this medicine; and, during this interval of abstinence from it, the effect of the iodine manifested itself, and the goitre was reduced to half its size. A friction with the *pomade* of the *hydriodate of potash* was then ordered, and the cure was completed. It was hence inferred, that considerable advantage might be derived, in some cases, by allowing interruptions during the administration of iodine.

We consider the foregoing statement a most important illustration of the advantage of administering iodine in small doses, yet prolonged for a considerable time. Hence its efficacy when taken along with alimentary matters. We can, on this principle, account for the alleged virtues of the *Spongia usta*, in which so small a portion of iodine is contained. And, in like manner, probably may be explained a popular remedy which we remember to have seen practised in a county of the north of England. It was, to send patients afflicted with strumous complaints to the sea coast, there to remain for several months, and to undergo the daily external application of cataplasms, almost entirely composed of sea-ware, in which, as chemists well know, a notable quantity of iodine is contained. But, at the same time, the internal administration of some species of Fuci, probably that known in Scotland by the name of *Dulse*, (Fucus palmatus), was likewise enforced. Mr Neill, in his "Tour through Orkney and Shetland," has furnished us with an anecdote illustrative of the ancient medicinal virtues which were ascribed to this plant. "There is a common saying in Stronsa, that 'he who eats of the *dulse* of Guiodin, and drinks of the wells of Kildingie, will escape all maladies except black death.'"

Upon the Treatment of Tape-Worm, and the Powers of the Oil of Croton Tiglium, in its expulsion. By Dr Francesco Pucinotti, Physician in Urbino; addressed to the Signor Caval. Consigliere Dottor Luigi Frank, of Parma.

That part of therapeutics, honoured Signor Frank, which relates to the treatment of worm diseases, notwithstanding the knowledge we have, at the present time, obtained of other disorders, remains obscured by a great number of medicinal mixtures, in each of which too much empiricism, and even superstition, still appears. And, for the sole cure of the tape worm, you are aware, how immeasureable is the catalogue of powders, mixtures, and potions, and what wonders are related of each; although their reputation has been rather founded upon fashion, or upon the authority of the person who proposed the nostrum, than upon truth and the constancy of facts. It is, moreover, true, that the diseases which, from their nature, most strongly resist our curative means, are those which boast of the largest train of remedies. Hence I have always concurred with the wish that has been expressed, that a bold hand might, at once, undertake to cleanse this augean stable.

Entertaining these sentiments, you may imagine with what satisfaction and profit to myself I read, in the Annals of Omodei, your short hint upon the cure of the tape-worm,—short truly, but valuable, in which you have presented to us a comparative picture of the methods used by you in the cure of this horrible disease, and in expelling from the human body that murderous guest.

> ……. cui non appar di capo
> Certo vestigio, qual lo vedi, lungo
> Ben trenta spanne, intier si tragge a stento
> Dai moltiplici error labirintei.
>
> *Mascheroni.*

You begin by saying, that, in the face of so many remedies, which are recommended and found efficacious in expelling whatever description of tape-worms we meet with in the intestinal canal of man, every experienced physician will have made the observation, that none of these methods correspond always to our expectations. (*Omodei*, vol. xxxii, p. 346.) And if the experience of eight lustra has provoked this remark, it is a sign that even now the most vaunted methods have many gradations of efficacy and of security.

The method of Chabert, to speak the truth, seems, at the present time, the most in favour and in use among physicians. The illustrious surgeon of Charles IV., King of Spain, M. Gonel, had tried at Rome, I believe, all the remedies that he could think of against the tape-worm, which tormented him miserably. By the advice of Brera, he took, at last, the preparation of Chabert, and by this alone was freed from the animal. I have seen at Rome, in the house of my preceptor De Mattheis, a tape-worm preserved in spirits of wine, which had been passed entire as a result of that valuable practice, the treatment with essential oil of turpentine. It must, however, be confessed, that this remedy is the most disagreeable in the world; that the Italian stomach does not readily bear those strong doses that are necessary to obtain an effectual and prompt victory over the worms; and that though the dose may be even diminished, yet that it constantly produces vomiting and pain. The excellent Dr Berzanti, physician of Urbino, my colleague, in the case of a lady who had all the symptoms which indicated the presence of the tape-worm, and who had many times evacuated, as she affirmed, a long portion of it, after trying various remedies, prescribed the essential oil of turpentine; but it did not correspond entirely with the expectations which had been formed of it, having been found excessively disagreeable. I have seen it indeed rejected, with repugnance, by delicate persons, and especially by females in a higher situation of life; and this is a strong obstacle to the treatment of a disorder to which females are more subject than men.

Other physicians, in their prescriptions, now rest, with the greatest confidence, on the method of Nouffer, accompanying it, however, with that of Odier; thus giving the patient either strong doses of castor oil, administering also, either before or afterwards, the root of the Polypodium Filix mas. A Turinese lady domiciled in Urbino, as well as a brother of the before mentioned Dr Berzanti, were, by this method, radically cured of the Tenia cucurbitana. But, with me, this treatment did not succeed entirely to my wish. In the case in which I tried it, although I obtained a few pieces of the tape-worm, yet still the sick person, in spite of the frequent and repeated dozes of the male fern, remained as at first incommoded; while such pieces of tenia as I had obtained, were attributed by me more to the purgative and vermifuge action of the castor oil, than to the other drug.

I will say nothing of the method of Desault, nor of that of Alston, never having put them to trial against the tape-worm. Against that of the first, I was influenced by the following remarks of Brera: "It is not to be denied," he observes, "that persons have succeeded in the cure of the worm, by using the mercurial oxides; but it must be considered, that this proposed method is always liable to be the cause of other disorders, more troublesome than the worms itself, and perhaps even more dangerous; besides, very few persons will submit to this mercurial preparation." The second method proposed I have always wished to avoid, not only because I have seen it used by my colleague without effect, but on account of the dangers that accrue from its use. "Unhappily," says Brera, "the tin of commerce in our country is more or less mixed with lead, and among it arsenical pyrites are not unfrequently diffused. Physicians, therefore, who decide on giving tin internally, should be alive to this circumstance, as I can assure them, from my own experience, that, if the tin be not well cleaned and pure, a saturnine colick, and paralysis of the inferior extremities, may be the pernicious effect that will ensue from it. In fact, although it may be thought safe to use the exceedingly pure tin of Malacca; yet, if we give ear to the warning of Margraff, even in this substance arsenical grains may be detected in a quantity sufficient to bring on very disastrous consequences.

The method of Matthieu, which was so highly rewarded by Frederick William the Third, and which boasts so many cures, is but a compound of the preparations of Nouffer, of Odier, and of Alston, surcharged with many drastics, and by this last property has resulted a medicine sufficiently powerful to bear off many victories over worms. But its empirical composition, more congenial to the shop-board of the druggist that invented it, than to the stomachs of those who are destined to swallow it, must, with physicians of observation, serve to increase their confidence in simple remedies, and to remind them of the axiom, "Nil æque sanitatem ægrotantium impedit, et medicorum ignorantiam arguit, quam remediorum farrago, eorumque crebra mutatio."

Having been thus led to consider the principal remedies most worthy of our confidence which have been adopted to expel the tape-worm, and especially the *cucurbitina*, or the *armata*, it has always appeared to me, that we might reduce anthelmintics to these two principal heads, viz. oily substances and strong drastics. These have always been the means used with the greatest frequency and success in ejecting worms. Consequently, the recent discovery of the oil of croton tiglium, which combines in itself each of these qualities, and is both an oily substance, and a drastic, the most powerful of any hitherto known, suggested to my mind the thought, that it might be a medicine more effectual than all others which are boasted of at the present day in destroying the tape-worm. When, therefore, a young man of Urbino came to consult me, who, for six years, had suffered under these worms, I was desirous to try upon him the new remedy.

This young man, named Raffaelo Banchetta, was twenty-eight years of age, of a lymphatic but vigorous temperament, of tall stature, and rather thin. For six years he had suffered from the tenia armata, which gave notice of its presence by various portions, of a medium size, that were evacuated. At first he endured this worm with little inconvenience, except from some rare attacks of abdominal pains, which were usually felt a short time before evacuating some spans of it. But, in progress of time, he began to suffer every now and then vertigo, and his body became more and more emaciated; he also felt, in a slight degree, other inconveniences which commonly accompany this disease. He was treated by our principal physicians, to whose care he had frequent recourse, with various of the most active anthelmintics. But the deadly inmate was not subdued by these means, and the patient continued constantly to suffer. Giving me one day an account of his disease, together with the methods of cure practised without benefit, I advised him to provide himself with a little of the oil of croton tiglium.

The patient purchased a good dose from the apothecary, Signor Donzelli, and began to use it agreeably to my prescription. He was placed upon a preparatory diet for two days; and in the morning of the third, I made him take, at breakfast time, a drop of this oil in a small cup of broth. A short time after he had swallowed it, I asked him if he felt a burning sensation in the fauces or the stomach; and he replied to me, only in the fauces; but it was very trifling. In an hour afterwards, began the evacuations of the belly, one following the other at intervals, but without causing any uneasiness or debility. On the contrary, the patient manifested unusual alacrity. The evacuations were, during the day, eight in number. I examined the feces in the evening, which were thick and yellowish. There was found in them a considerable quantity of pieces of tenia, some of two, and some six joints united; but the greatest part was insulated, and the longest pieces were but of two spans in length. After a day's repose, the medicine was repeated; the patient had six evacuations; and, in the feces, which were more scanty, were found corresponding portions of tenia. He remained various other days, without taking any more oil, free from inconvenience; and it was considered that a cure was effected. But a month afterwards, he suffered anew ventral pains, as well as vertigo, and then other pieces of the worms reappeared in the feces. He returned afterwards to the medicine, used it in the same dose, and, in his evacuations, many other pieces of the tenia, apparently in a putrid state, were expelled. Six times, with an interval always of one or two days, he used the oil of croton always in the dose, of a single drop. I will not allege that I have observed the head of the worm; but can affirm, that my patient, from the period when he last took the oil of croton, has remained entirely free from any ventral uneasiness; that he has no longer suffered even a single vertiginous symptom; and that in the feces he has not, for many months, seen the traces of a single piece of the worm, which had previously been contained in them. In two other cases, the same oil has acted in a similar manner; though, in one of these, I could not yet absolutely repose on security; for scarcely two months have yet elapsed since all symptoms of the presence of the worm have ceased.

These cases are assuredly too few to authenticate the virtue of any one remedy; and I am sorry that my practice has not yet allowed me to boast of an adequate number of them. But I hope, nevertheless, that they are sufficient to recommend its use, particularly when viewed in connection with the reason that suggested this practice. A specific remedy against the tape-worm still remains a desideratum; but it must be considered that a remedy which proves a poison for this animal, must be particularly so to man. For, according to the experiments of Coulet and Fax, the sensibility of this worm is by far inferior to that of the intestinal tunic. These considerations, therefore, will, I trust, add farther support to my conclusion, that oily substances, and strong drastics, are the remedies that, more than any others, triumph against the tape-worm.

But while, on this subject, I will not repeat the opinion of some, that oily substances chiefly succeed as vermifuges, because they close up all the air-vessels, which, in these animals, are found to be very numerous; I will adhere to facts. The successful results obtained against human worms, by various kinds of oils, and principally by means of castor-oil, added to the similar method of Nouffer, which, however, has failed against the armed tenia, argue, as it appears to me, sufficiently in favour of preferring, among numerous anthelmintics, oily substances. Regarding drastics, no one will doubt, but that they enter either as the principal coadjutors, or as the principal components of the most famous methods used against the tape-worm. Thus Brera, and other sagacious writers who have examined and adopted almost all the best methods of combating with the tenia, have been enabled, from their experiments, to affirm, that we fail in possessing a specific to destroy it; and that, from the class of purgatives, the strongest are to be selected as the principal remedies against it. (Leture, 4. § 189). Rosenstein, Darelius, Lindhult, Sidren, and others, have procured the evacuation of the tenia by the use of cold water; but, in these cases, the practice has been preceded by a strong purgative. And if the tenia, as the experiments of Rosenstein would demonstrate, resists, with equal effect, both strong degrees of heat and of cold, it appears to me more consonant with facts, to attribute the benefit received rather to the violent purgatives which were administered, than to the cold water afterwards given. Similar reasoning applies to the mineral waters used, with advantage, by Goeze and Fax; their virtues may be attributed to the purgative effects of the muriatic and alkaline sulphates contained in them. The method of Mejer is also purgative. And, besides, practitioners, in hopes of better success, enjoined the use of castor-oil along with the method of Nouffer. She also, with all the confidence that she placed in the root of Polypodium Filix mas, preferred and introduced the most powerful drastics in large doses, such as the muriate of mercury, the dry gum of Aleppo scammony, and gamboge, which formed the purging indispensable to the good success of her mode of treatment. A similar reasoning applies to the method of Desault, and to that of Matthieu; which last, although divided into two electuaries, contains likewise jalap, sulphate of potash, Aleppo scammony, and gamboge, in very strong doses, which, in case of their insufficiency, the celebrated pharmacian was desirous should be accompanied with the use of castor-oil, administered either by the mouth or by clyster.

Judging, then, from the analysis of these medical compositions, it follows as a natural consequence, that the oil of croton tiglium, which unites in itself the qualities of an oily substance, and of the strongest drastic hitherto known, ought to be that medicine which should inspire greater faith than all others known to us, that are used against the tape-worm.

Besides these reasons, which recommend the oil of croton in preference to all other remedies, other arguments might be advanced, which relate to the convenience and safety attending its use, the greatness of its effect, when contrasted with the smallness of the dose, and the short time in which it effects its object. Let us, for instance, recall for a moment to our memory the inconvenience attending the method of Chabert, which is, perhaps, the only one that can dispute the palm with our oil of croton. While the one (the oil of turpentine), is a medicine the most disagreeable of all others, in the doses which it requires to expel the tenia adulta and armata, while it is insupportable to the Italian stomach, even a small dose exciting, in some individuals, nausea, anguish, and vomiting, and in the delicate and hysterical, spasms, convulsions, and fainting fits; the oil of croton, on the contrary, cannot produce the smallest degree of disgust, because no unpleasant smell or taste accompanies its use; and because, whether given in the form of a bolus, or in broth, it is a medicine the most convenient and indifferent to the taste of sick persons. With a single drop of the oil of croton, are obtained many evacuations in a short time, which could not, perhaps, have been procured, without three, or even four, doses of the electuary of Matthieu; and it must be considered, that frequent evacuations, in the shortest time possible, form a very great part of the cure of the tenia, because, by this means, the worm is deprived of leisure to rally its strength, and to act, as I would say, on the defensive. These evacuations are obtained, either without any pain, or with the slightest pain possible, which is not the case when other drastics are used. The irritation in the fauces that the oil produces, in some persons, is a circumstance that is not attended with great uneasiness; and it can even be obviated, by administering it, as Fenoglio recommends, in pills. Among many, instead of painful sensations, the medicine produces only pleasant feelings, as occurred to my patient labouring under tenia, and likewise to the student Marcheselli, in the clinical school of Padua, (*Omodei*, April and May 1824, page 83). Although the mucous membrane of the intestines is found in some persons predisposed to take on an erysipelatous state of inflammation, the beautiful experiment of my worthy preceptor and friend, Professor Morichini, prove that the oil of croton, so far from increasing the intestinal heat, regarding which no fear ought to be entertained, may be used with the hope of altogether reducing it.

In short, I would conclude, that there is no medicine that can be used against the tenia with so much safety; it, in the smallest doses possible, produces, in the shortest space of time, the most powerful effects. None approximate so much to the antient therapeutic apothegm, *tuto, cito, jucunde*, as the oil of croton tiglium.

Before, however, I cease to speak of this extraordinary medicine, I ought to point out, that, when I have used it, I have never had skill sufficient to discover that it had an elective action upon the uriniferous system; or, in other words, that it diminishes the copiousness of the urine. And, although I might have observed this phenomenon before, attributing it to a secondary action of the oil, I should have more early sought to explain it by some counter secretions, which almost all powerful drastics excite; by which law, the administration of drastics in ascitic dropsy is indicated, when diuretics are not effectual. In fact, with this oil of croton, Dr *Nimmo*, by procuring many alvine discharges, cured an ascitic dropsy, against which he had in vain tried the most active diuretics, (*Omodei*, vol. xxv. p. 296.) You will pardon me, Signor Frank, this brief digression, that has not certainly any thing to do with the solitary worm; but I was desirous not to omit it, because we physicians, when we have found a medicine of strong and assured virtue, are apt to adorn it with a crown of endless secondary virtues, of our own coinage. This I would avoid in the case of the oil of croton. We ought to be content with its unequalled drastic virtues. Its efficacy against the tenia is not derived from a special anthelmintic virtue, but only from its eminent expulsive power.

But it may be unknown, that others have before me used the oil of croton against the tenia, nor would I, with ridiculous vain-boasting, affirm that I was the first to make the attempt. Lemery, Levis, Geoffroi and Murray, have already exalted the vermifuge virtues of this medicine, (*Omodei*, vol. cited, p. 296.) And among the first who published in Italy their experiments upon the oil, Signor Tantini throws out a hint that it might be used with effect for the expulsion of worms, and especially the tenia, (*Omodei*, vol. xxvi. p. 204.)

But, at the present day, the exterior of the fresh root of the pomegranate is much in vogue against intestinal worms, and against the tenia. Breton, Gomez, Cologno, are cited by you as those who have praised it, having made experiments of its virtue; also Husson has not long since confirmed the value of this medicine, (*Omodei*, *Annali universali di Medicina*, December 1824, p. 450.) Upon this allegation, I will neither affirm nor deny; but, to tell the truth, it seems to me that the oblivion in which this medicine has remained for eighteen years (the English physician Buchanan, as you say, having first brought it into vogue), is but an indifferent recommendation. Was Buchanan acquainted with the prior experience of Dioscorides, who likewise preceded Madame Nouffer in making known the root of the Polypodium Filix mas, as an anthelmintic? These are his words, "The decoction of the roots of pomegranate drunk, kill the large worms of the body, and drive them out of it." (*Matthiol. Dioscor.* cap. 13. lib. 1. p. 159. in fol.) Thus, your advice is likewise commendable, not to yet abandon the use of the alkaline arsenical solution of Fowler, since the best success from it has been obtained by an English physician, when all the known remedies were inactive against the tenia.

I also note the method of Gelnecke (not new to us Italians), which, in the year 1821, was published by the famous Dr Cagnola; (*Omodei*, vol. xvi. p. 252.) But I find it full of difficulty, and not even exempt from danger. Signor Gelnecke no sooner bathes the portion of the extremity of the tenia that is hanging out with the hydrocyanic acid, than the worm immediately makes such great efforts to re-enter into the abdomen, that it is necessary to draw it out with much force, (*Omodei*, vol. xxxii. p. 474.) It is probable, then, that the application does not always succeed in conquering the vehement efforts which the worm makes to re-enter into the abdomen; and if these attempts should be unsuccessful, would that portion of it, which, after having been bathed with the deleterious lotion, re-enters with effort the intestinal canal, be innoxious to the patient? When a part of the tenia comes from the anus, it may at first appear an easy task to extract it entire. Observers, however, are otherwise convinced. As soon as that part of the worm which appears is drawn out still more, the sick person begins to feel in the abdomen a sense of tormina and tension, such as takes place in convulsions, until the drawing out is abandoned, and the worm is cut. But granting even that all these difficulties are easily surmounted, Hufeland still thinks that the hydrocyanic acid, if applied in too strong a state, or in too great a quantity, to the tenia, may possiby prove detrimental, as its influence, owing to contiguity of surface, is liable to extend itself to the patient.

It appears, then, that these recent discoveries cannot successfully contend with the oil of croton for the supremacy in curing the tenia; or at least they do not seem sufficiently effective to induce me to renounce the principle, that oily substances and strong drastics are, at present, and are likely to be, the best remedy against that worm. But it should be remarked, that the oil of croton has a substitute in the oil of Euphorbia lathyris, discovered by Dr Calderini; its action upon the intestinal canal being in every respect the same, while it possesses the advantage of being an economical medicine, and easily raised at home.

In short, to find a remedy, which, although the patient should be in danger, may excite no uneasiness, but in a short time, and in small dozes, strongly excite the bowels, is to discover the most efficacious mode of expelling the tenia, against which there being no specific, I do not see any other method more secure than the use of purgatives. And, therefore, the oil of croton is, above all others, eminent, although it possesses no special action upon the vitality of the worm, and no virtue in restoring the vitiated digestive power of the intestinal canal. I say this, because, at the present time, Needham and Reil have each of them followers, who think, that, if the physician does not likewise remedy the peculiar defect of the presiding canal, the tenia, even although its head be expelled, reproduces itself. This is to dig up from the abyss of Aristotelian philosophy, the hypothesis of *equivocal generation*, and to turn with contempt from the experiments of our great Italian philosophers Redi and Vallisnieri. For my own part, I believe, that, if the murderous guest be once entirely expelled, the disease is destroyed; for such, at least, seems to me the voice of experience. And as for the generation of worms, I shall content myself with repeating the cautious precept of the Swedish naturalist; "Ingenue fateor unam hypothesin non minus obscuram esse quam alteram; fateor etiam me nescire quæ vera sit harum, nec opinari me audere, ob difficultates ab utraque parte mihi impenetrabiles. Dies forte docebit."

On the Inflammation of the Bloodvessels which occurs in Variola. By Dr TANCHOU, Member of the Legion of Honour.

Among the numerous pathological alterations which are met with in the bodies of individuals to whom the smallpox has proved fatal, there are some

very remarkable ones, which have escaped the few medical men who have undertaken these researches.

In fifty individuals dead of the smallpox, whom I have opened, I have found constantly a greater or less degree of inflammation on the internal surface of the heart and of the arteries; twice only has it appeared to me so slight as to be called in doubt.

This inflammation developes itself in the form of plates or bands, in the direction of the length of the arteries; the vessels then become red, varying from rose colour to crimson red, even like blood itself. Their internal membrane is sometimes thickened.

Sometimes the inflammation occupies only the heart and the large arteries; at other times it invades the smaller arterial branches, and penetrates even into the veins. In all these cases, the inflammation of the last mentioned vessels has appeared to me merely consecutive, taking its origin from the cavities of the heart; for, so far from existing uniformly in the veins, I have never found it except in the principal and the larger veins, and always in those which are connected more immediately with the heart.

Arterial inflammation often seems to exist only in the internal membrane of these tubes. What proves this fact is, that, in lifting up this membrane, all trace of inflammation disappears. At other times, it occupies the whole thickness of their coats, and then they are as red without as they are red within. In all these cases, the internal membrane is swelled, their coats are thickened, their diameter is diminished, and their friability increased.

The inflammation of the arteries has sometimes appeared to me stronger in the small than in the larger of these vessels. If this were proved, we should be led to suppose that the exhalant vessels, after having furnished the eruption in them, would be themselves inflamed; that they would communicate their inflammation to the small arteries, from thence to the larger, and so on, gradually, until the heart was affected; but that is a notion which I do not support. I shall therefore bring forward some facts, which, if they do not tend to confirm this view, are at least very remarkable. I have observed, that whenever the eruption or the inflammation of the skin was greater in one point, the arteries which distribute themselves upon this point were more or less exclusively inflamed. This morbid state has only terminated in the descending aorta; but the face being very much swelled, inflamed, and even excoriated, the carotids, and also the superior aortic system, have been found in the most decided inflammatory state. Another example might be given: I have found in an individual, whose pustules and crusts were confined to the face, the rest of the body being in a state of desquámation, the external carotid artery, the common carotid, the subclavian, the aorta, and the heart, only, inflamed; the inflammation had spared the other arteries; it had not reached the axillary artery, it did not even enter into the cranium along with the carotid artery.

Commonly, in individuals who die of diseases foreign to the character of the smallpox, we find the arteries empty, and small clots of blood and fibrine only in the heart, or in the aorta at farthest; but in variolous patients, on the contrary, I have almost always found small clots and fibrine, even in the smaller inflamed arteries, which would lead us to suppose, that the vessels had lost their contractility, by the very effect of the inflammation of their coats. This idea seems to me the more plausible, inasmuch as I have often remarked, that small clots of blood and of fibrine were more abundant, more voluminous, and larger, in proportion as their arterial coats were more inflamed. This fact deserves, in a particular manner, to be verified by anatomists; for if it were true, it would establish a real distinction between irritation and proper inflammation. I have always thought that it was the cessation of the action of capillary vessels,—the loss of their contractility,—their paralysis, (if I may thus express myself) resulting from the inflammation of the coats themselves, which constitute *inflammation*. For as long as these vessels are not inflamed, as long as their action and contractility subsist, there is only irritation: the morbid cause ceasing, the tumefaction may be diminished, and the diseased part, as it appears to me, return to its natural state. But if the capillary vessels are themselves inflamed, their action is paralysed, the blood stagnates in the affected part; and if this fluid is not promptly removed by depletive medicines, or taken up by the absorbents, these small vessels may become disorganized, and suppurate.

The state of the vessels which I have remarked in variolous patients, ought not to be confounded with a phenomenon incidental to the dead body or to imbibition; for, while I have met with it a few hours after death in individuals who were still very warm, I have also discovered arteries, under similar circumstances, differently coloured and differently modified. The inferior aortic artery, for instance, has often appeared to me diseased in that portion of it which is near the heart, while the other portion was sound: at other times, the superior aortic system, or one of its branches only, or its divisions, have appeared to me inflamed, while the other arteries, the other branches of this system, were in their natural state. I may report a case, where one of the carotids only, and the branches which distribute themselves on the face, were inflamed. If this state were a phenomenon peculiar to the dead body, why would it not be exhibited, at the same time, and during the same inspection, in all the arteries, or in the whole continuity of those which are similarly circumstanced? Why, in short, would it be exclusively found in the dead bodies of variolous patients?

I have even met with many other morbid alterations in individuals who have died of the smallpox; but none has appeared to me sufficiently constant, or sufficiently remarkable, to account for its fatality. The inflammation of the stomach and the intestines, although very frequent, is sometimes, however, wanting, or is nearly superficial: the brain is more frequently only injected, and the lungs are, in a manner, passively obstructed rather than actually inflamed. Hence it is proper to remark, that, in variolous patients, all the tissues and all the viscera are very much injected. This is the necessary consequence of the nature of that inflammatory fever, truly angiotonic, which exists; but if we attach no importance to this injection, which is altogether remarkable, when we compare it with that produced by inflammation, we shall commit serious errors in the inferences which we deduce. In the digestive organs, for instance, this phenomenon, which is, in health, certainly most decided, by reason of the highly vascular nature of their tissues, becomes still farther augmented by the action of physical laws after death. I have very often found these viscera particularly injected in the most depending portion of them, and in the convexity of the arch which the intestines form with the mesentery; we cannot doubt but that this state was a cadaveric effect, for I have not only found it more decidedly marked in proportion to the length of time which the individual has ceased to exist, but I have also made it to vary at pleasure, by merely giving to dead subjects different positions, for a longer or shorter time after death. This injection is sometimes carried so far along the continuity of the limbs, that I have found collections of blood effused about the veins; a result probably arising from the tearing, or the rupture, of these vessels. It is perhaps the same morbid state of the lungs which has imposed on practitioners, who, in some variolous patients, have published an account of the gangrene of this organ. I do not deny but that inflammation, particularly of an organ, may occasion the death of individuals affected with smallpox, but I insist upon the difference which I have explained, as a very important one to be made. I have also found in variolous subjects the glands surrounding the larger cavities inflamed, and even in a state of suppuration. But of what importance can this morbid alteration be to life in general?

But a very important question is left for us to solve. Do the individuals to whom the smallpox is fatal, die of inflammation, or of the general over-excitement of the viscera; or of the inflammation of some one organ in particular; or, lastly, is the fatality induced by the inflammation of the heart and arteries? I believe these three kinds of death possible, particularly because there is sometimes a failure in the *carotiditis* and the *arteritis*, or they are only very slight, and because we do not otherwise know to what degree these affections are mortal. But if we consider, however, the frequency of this morbid alteration, the importance of the organ which it affects, and when we afterwards compare it, on account of its consequences, with the inflammation of veins, we shall be induced to think, *that, at the same time that the inflammation of the heart, and the arteries, is a very fatal affection, it ought to be likewise regarded in variola as the most frequent and the most powerful cause of death.*

I shall now add a few words for the use of the practitioner. It has always appeared to me possible to detect, during the life of the patient, the inflammation of the heart and of the arteries. The uneasiness and anxiety which he suffers are inexpressible; the burning heat within, which consumes him, does not permit him to rest in one place; the pulse, moreover, leaves no doubt about this point; it is unequal, irregular, often beating differently in different parts of the body, and not synchronous with the motions of the heart. It seems that these organs are differently affected by separating the stimulus which disturbs them. This state yields very readily to bloodletting; but if it does not yield, or if it is reproduced notwithstanding detraction of blood, the patient is lost.

Another remark is, that, in variolous patients, the leeches bleed for a long time, and the punctures they make have a great tendency to reopen. I have seen some of them on the fourth day still furnish blood. The first fact was easy to anticipate, owing to the particular state of the skin. But would not the second be explained, by the disposition which the vessels have in this affection to be inflamed?

Another remark, no less practical, is, that bleeding, which in general has appeared to me useful, and attended with success, rarely succeeds when faintings supervene. Are leeches here contra-indicated, or is that treatment suitable to the importance of the case? I do not know; but a circumstance worthy of remark is, that, notwithstanding faintings, the blood continues to flow, and that, precisely in this stage, it is with the greatest difficulty stopped.

I believe I have remarked, that, when an inflammation of the vessels proves fatal to individuals attacked with variola, it is commonly in the period of invasion (the eruption of the pustules not being effected), or in the period of suppuration. It seems, then, that the inflammation is repelled from the skin towards the exhalants of the heart. I know that inflammation of one or several viscera may arrest the eruption, or that these viscera may be inflamed under the influence of the inflammation of the skin in the period of suppuration; but I will say that these cases are not the most common, since it is particularly in the period of invasion, and of suppuration, that the vascular system is most in action. Death, by inflammation of some viscus, takes place often when the eruption is completed: there is at that time a true metastasis, the pustules disappear or dry up, the skin becomes contracted and pale; but when dissolution ensues from vascular inflammation, the softness of the skin continues, and the pustules scarcely shrink, if they shrink at all.

A Case of Croup, which was Spasmodic at its commencement, but, in its progress, became Inflammatory, successfully treated. By Charles Martin, Surgeon, Island of Mull, Argyleshire. Communicated in a Letter to one of the Editors.

Dear Sir,

There are few medical authors who do not acknowledge the existence of two varieties of cynanche trachealis or croup—the spasmodic and inflammatory; and it appears to me, that this distinction is judicious in a theoretical point of view, though, perhaps, of no very essential importance in practice. The diagnostic symptoms of each variety are not always very characteristic, but, upon a careful and attentive observation, the necessary information may be acquired. When a person has been seized with shivering, succeeded by heat of surface, acceleration of the action of the heart and arteries, pain of trachea increased on pressure, extreme difficulty of breathing, accompanied by a whizzing sound, and continued tickling cough, I would say that the disease is inflammatory croup. On the contrary, I would consider the disease as purely spasmodic, when there is little or no quickness and frequency of pulse, no heat of skin, and other symptoms of inflammatory fever; when the difficulty of breathing is not so continued, and rather comes on by fits; when the paroxysms of coughing are followed by an interval of ease and comparative tranquillity; and, lastly, when the malady makes its attacks more suddenly, and, by its violence, would seem to threaten the instantaneous extinction of life.

A case illustrative, I think, of the foregoing remarks, came lately under my notice, and I shall assume the freedom of communicating it to you.

Mary Maclachlan, aged three years and three months, had been affected with the measles, but, from the extreme mildness of the disease, no medical assistance was required. Nature, unaided by the too often officious interference of art, effected a cure. For some days after she had got out of bed, and completely recovered of the measles, except that she was a little weak, she was troubled with hoarseness, but this symptom was little attended to. On Tuesday the 11th of April, however, the child became extremely restless and uneasy, and after having reclined her head for some time upon her mother's knee, she requested to be put to bed. But she had not been long there, when, about to fall asleep, she was suddenly seized with a violent paroxysm of coughing and difficulty of breathing. During the fit the face became flushed and swollen, the lower lip assumed a bluish livid appearance, the eyes discharged a profusion of tears, the face was bathed with perspiration, which flowed down the cheeks in large drops, and the whole body was violently agitated—nay, I may say, convulsed. In a short while the paroxysm ceased, but the breathing continued anxious and oppressed. The patient now became easy and quiet, the face became pale, and the lip resumed its natural rosy appearance. But the little sufferer was doomed to have her agonies repeated. In about ten or fifteen minutes, but sometimes at a much longer interval, the paroxysm of coughing was renewed, and with equal violence; and was accompanied with the same appearance of the face and lower lip, and lacrymal discharge, as above described. But neither preceding nor after the fit, was there any morbid heat of skin, nor increase in the action of the heart and arteries, except that which was produced by the violent agitation into which the body was thrown during the paroxysm. In short, there was no inflammatory fever.

The ignorant parents were little apprehensive of the dangerous nature of the disease under which their child laboured, and by the neighbourhood around, equally ignorant as themselves, it passed as "a common cold," but attended by "unusual symptoms," which these good people were willing to ascribe "to the dregs of the measles still lurking in the body." The parents readily assented to this opinion, and thus they were lulled into a dangerous uncertainty. But always watchful and attentive to their little offspring, they soon discovered that the disease was making rapid progress—the cough became more violent—the breathing more laborious.

When the child was troubled with the hoarseness, some plant (what it was I could not ascertain from the description) was boiled with a small quantity of impure extract of liquorice, and the decoction given to the patient with a view to alleviate the cough. This seemed to do no good, and the parents becoming anxious, the father came to me, and requested me to visit the girl. I did so, and from the history of the case, the state of the breathing, which was accompanied with that noise peculiar to this disease, and the paroxysms of coughing, I did not hesitate to say that it was a case of croup; and from the absence of heat, frequency of pulse, and other symptoms of synocha, and from the fits of coughing coming on suddenly and at short intervals, I had every reason to conclude that it was the spasmodic variety of the disease.

Building my practice on my theory, I prescribed an antispasmodic draught, composed of the tincture of opium, peppermint water, and simple syrup, to be preceded by an emetic of five grains of ipecacuana in powder, and one grain of the emetic tartar. I also ordered the warm bath in the evening, and a blister to the neck; but a blister seemed too formidable, and the parents would by no means consent to its application, always urging "that the child was very feeble and unable to bear the pain." I insisted for some time, but they were obstinate, though they readily assented to my other prescriptions.

April 14th.—I visited my patient in the afternoon, and was informed that she had passed a restless night, being much harassed with the cough, and difficulty of breathing. The emetic operated well, and seemed to afford temporary relief. I examined the state of the pulse and skin, but found both natural; and between the fits she appeared pretty easy. The antispasmodic draught increased in strength, ordered to be continued, as also the warm bath; and as the bowels were rather costive, five grains of calomel, sweetened with refined sugar, were prescribed.

15th.—Symptoms as yesterday. Medicines to be continued.

16th.—At this visit I found the aspect of things much changed. The skin was now hot and dry, the pulse quick and frequent, but not strong; the breathing was extremely difficult, scarcely any interval elapsing between the going off of one fit, and the accession of another, and the paroxysms of coughing were repeated almost every five minutes, while they were scarcely so violent as they were yesterday.

It seemed to me that the disease had assumed a different aspect, and that I had now to contend with a real case of inflammatory croup. Accordingly, I changed my method of treatment. I discontinued the antispasmodic draught, and wished to apply several leeches to the throat, and a blister to the nape of the neck. My patient's parents were extremely poor, and whether they were afraid that the leeches would cost too much money, or that they considered such rigorous treatment unnecessary, is more than I could say, but they declined applying them. I had now no other alternative but calomel and the warm bath, and with the former weapon in my hand, I conceived much good might be done; and my most sanguine expectations were fully realized.

I commenced by giving three grains of calomel, sweetened with refined sugar, eight times in the day, repeating the dose every second hour, and I ordered the bath to be continued.

17th.—No apparent change either for the better or for the worse. She slept indifferently during the night, and complained of great thirst. Pulse still frequent, and skin rather hot, but in a state of gentle perspiration. I examined the tongue, and found it covered with a thick yellowish brown matter, which I could easily scrape off with the nail.

The bath to be continued. To-day I increased the calomel to twelve doses, each containing four grains of the medicine, to be repeated every hour.

I was informed to-day, that, during a severe paroxysm of coughing, she started upon her knees in bed, and throwing her arms around her father's neck, held him with a convulsive grasp until the paroxysm had ceased. This happened on the second day of the disease. This fit the parents imagined would extinguish the vital spark.

18th.—This day I was happy to observe that my patient was much better. She reposed ill during the night, but enjoyed a comfortable sleep in the day time. The breathing was less difficult, and the fits of coughing less violent and frequent; the skin was cool, and the pulse did not exceed 76 or 80 in a minute. She has diarrhea, but this I attribute to the effect of the calomel; and yet, from the great quantity administered, one would suppose that the bowels would be paralysed. The tongue is extremely foul in the centre, and its edges are of a dark hue. There are also a few small ulcers in the inside of the cheeks. May not these have been produced by the calomel? The mother thinks that they did not exist previous to the administration of this medicine. Bath and calomel to be repeated as yesterday.

19th.—This forenoon she coughed up a quantity of matter, which the mother describes as resembling coagulated blood, but more firm and compact. This I conjectured to be a portion of the coagulable lymph which is always deposited on the lining membrane of the trachea in the inflammatory croup. It was thrown into the ashes, but if any thing similar was again expectorated, it was to be retained for my inspection.

20th.—Rested quietly last night. This morning coughed up a little matter, which I found, upon examination, to be rather fibrinous, and so adhesive, that it could be stretched for some way on the finger, without making any breach of continuity. The pulse is feeble. The countenance is pale. She picks at her nose, and has voided a worm. The tongue is loaded, and it appears to me that some of the calomel adheres to it. Mouth painful from ulcers. During a fit of coughing, induced, the mother thinks, by a small quantity of the calomel which was swallowed in a solid form, tickling the fauces, a quantity of blood was ejected; but whether it proceeded from the lungs or stomach, I could not determine, but I am inclined to believe that it came from the former organ.

The bath and calomel to be discontinued, and some nourishing food to be given. For the ulcers of the mouth I ordered a little borax mixed up with honey.

I considered my farther attendance unnecessary, but recommended a few anthelmintic medicines to destroy the worms. The parents wished the girl to acquire some strength before they would allow me to administer any more drugs, and I did not therefore insist.

Queries.—From the absence of heat and acceleration of pulse, and other symptoms of inflammatory fever, am I not justified in concluding that this was a case of *spasmodic* croup; and when the symptoms of this fever supervened, am I not allowed to infer that the disease became truly *inflammatory*? To what am I to ascribe my success in this case? Certainly to the calomel, for her parents would not submit to the application of leeches or blisters. When the bowels were freely unloaded by the calomel, to what cause was the foulness of the tongue owing? and what produced the ulcers of the mouth? To the action of calomel, I would answer; for this medicine remained frequently in contact with the mouth, as it was swallowed often with great reluctance. And, lastly, may we not anticipate that this preparation of mercury may be more extensively employed in inflammatory diseases, *not* to act as a cathartic, but in some other inexplicable way, perhaps peculiar to itself, but not yet well understood. I am, &c.

Observation on the Cure of the Chorea, by internal use of Nitrate of Silver.

M. Priou, physician at Nantes, having, in 1815, had to treat a little girl, aged seven years and a half, attacked with chorea, he employed at first, without success, the means commonly used against this disorder. He afterwards had recourse to Dr Merat's pills, which are composed of the following ingredients:—Nitrate of silver melted, 6 grains; extract of opium, 1 drachm; musk, 11 scruples; camphor, 4 scruples. The mass was divided into 96 pills, of which the smallest dose was one in the morning, and one in the evening. The little patient took two pills a-day; and on the 15th day all the symptoms had disappeared. During the whole treatment, the child took 69 pills; she has since enjoyed good health.

Another little girl, aged seven years, was suddenly seized with St Vitus's dance, after a great fright. Antispasmodics, leeches, cold baths, lavements of assafœtida, &c. produced no favourable change. M. Priou had then recourse to the pills which had already succeeded with him. On the fourth day the improvement was sensible; the use of the medicine was continued during a month, at first in doses of two, afterwards of a single pill a day. The patient, after this time, was perfectly cured.

Convulsions caused by Worms, and Cured by Anthelminthics. By Dr GÜNTHER, of Aix la Chapelle.

M. GÜNTHER was called in to attend a girl of twelve years of age attacked with this disorder; she had frightful convulsions of the superior extremities; she threw her head sometimes forward, sometimes backward, to the right, and to the left, with extreme quickness; she made the same movements with the arms. He also remarked a convulsive agitation of the muscles of the inferior extremities, certainly inconsiderable, but which continued day and night. M. Günther endeavoured to gain a knowledge of the causes of the disorder; but all that the mother could tell him was, that her daughter had been a long time attacked with this disorder; that a decoction of quinquina, with the addition of valerian and flowers of zinc, had much relieved her; but that, for some time past, it had no longer any effect. M. Günther describes the patient as having a brown complexion, the body lean, her belly large, and her pupil dilated. From the prescriptions of the physicians previously consulted, antispasmodics and anthelmintics had already been employed, on account of the patient having sometimes parted with worms. Owing to these symptoms, Dr Günther made the following prescription:—Gum. Assafœtid. Extr. Valerian. āā dr. jj. Extr. Bellad. gr. v., Flor. zinci scr. j., Castorei Moscov. gr. xxxv. m. f. pil. pond. gr. jj. d. s. Five pills to be taken three times a-day. At first she had only four at a time given her; these were gradually augmented to six, while at the same time she observed a suitable regimen. The patient was well in a short time after; towards the end of the disorder she was made to take a decoction of quinquina.

The second case is dated in the year 1787, and has been communicated by Dr Schmeight. The subject of it was a young girl of about 14 years of age, who had regularly every morning fits of the most terrible convulsions, more frightful than those just described. After the fit she was pretty well, but always weak and exhausted. The invasion of the disorder manifested itself by convulsions of the eyes, of the mouth, of the tongue, and of all the muscles of the face. Sometimes there was a sardonic smile, sometimes her features expressed fear, terror, fury; afterwards the patient leaped violently, and spat all around her; she then leaned herself backwards, remaining some minutes in this position; and then threw her chest forwards, while the convulsions of the muscles recommenced as at the moment of the attack. She afterwards fell into a kind of swoon, which commonly ended by frequent yawnings. She was then like a person who awakes from a profound sleep. In this state she was carried to bed, where she somewhat regained her strength; but remained always weak, and could never remember the state in which she had been during the attack. This poor girl belonged to a superstitious family. They believed her to be possessed of the devil—they addressed themselves for this reason to a priest—and they were already upon the point of exorcising her, when Dr Schmeight persuaded the relations that the unhappy girl was not possessed, and that he would charge himself with her cure. M. Schmeight employed one of the most powerful anthelminthics, and succeeded in causing her to part with many taeniae by stool. From this moment the girl was well, and a few days sufficed to restore her to her strength and to perfect health.

Effects of Revaccination as a preventive from Smallpox. In a Letter to the Editors.

GENTLEMEN, *Stonehaven, 30th April* 1826.

As an appendix to Dr Monro's most valuable paper on small-pox in your last number, I would beg to remark, that the small-pox prevailed much in this neighbourhood some years back. During that time, I observed that they occurred in a great number of subjects who had previously b vaccinated; but were always more or less modified by that operation. This effect varied much in different individuals, even of the same family, whose constitutions were apparently very similar. It occurred to me to try the effects of revaccination as a preventive. A pustule almost always rose; but which differed much in different persons. In some it approached much nearer to the character of the genuine vaccine pustule than in others. But in *every case* it had the effect of preventing even the modified smallpox. Not one individual whom I revaccinated ever took the smallpox in any way; nor have they to this day. I am quite convinced, that, by revaccination, and thus, as it were, completing the vaccine influence in the constitution, the smallpox may, in every instance, be prevented. For how long it may be so, time alone can determine. But of the fact I entertain not the least doubt whatever, as I put it to the test of actual experiment in a very considerable number of cases, in every one of which it was successful. I have the honour to remain, &c.

Wm. Donaldson, *Surgeon, R. N.*

Report of the Hospital for the Casual Smallpox in London. Ordered by the House of Commons to be printed, 2d March 1826. (Communicated by Professor Monro.)

During the present year (1825) smallpox has been decidedly epidemick in London. The applications for admission into the Smallpox Hospital more than doubles those of 1824, and approaches very nearly to the highest number ever known since the foundation of the hospital, in 1746.

Table I.—*Admissions and Deaths at the Smallpox Hospital, during Fifty years, viz. from 1776 to 1825 inclusive, with the rate of Mortality per cent. in each year (omitting fractions).*

Year.	Admissions.	Deaths.	Rate of Mortality per cent.	Year.	Admissions.	Deaths.	Rate of Mortality per cent.
1776,	374	80	21 in 100	1801,	177	55	31 in 100
1777,	497	125	25 ...	1802,	175	68	39 ...
1778,	269	74	27 ...	1803,	98	22	32 ...
1779,	351	136	46 ...	1804,	48	8	17 ...
1780,	175	53	30 ...	1805,	280	97	35 ...
1781,	646	257	40 ...	1806,	100	35	35 ...
1782,	122	52	42 ...	1807,	172	48	28 ...
1783,	382	121	32 ...	1808,	128	36	28 ...
1784,	351	127	36 ...	1809,	146	41	28 ...
1785,	314	108	34 ...	1810,	149	51	34 ...
1786,	175	51	29 ...	1811,	94	22	23 ...
1787,	362	106	29 ...	1812,	144	54	37 ...
1788,	142	49	34 ...	1813,	69	18	26 ...
1789,	285	107	38 ...	1814,	179	26	33 ...
1790,	192	68	35 ...	1815,	108	34	34 ...
1791,	277	89	32 ...	1816,	141	29	20 ...
1792,	188	58	30 ...	1817,	160	48	30 ...
1793,	358	134	37 ...	1818,	58	14	24 ...
1794,	213	72	33 ...	1819,	193	61	32 ...
1795,	180	48	27 ...	1820,	142	34	25 ...
1796,	447	148	33 ...	1821,	177	49	42 ...
1797,	51	14	27 ...	1822,	194	57	29 ...
1798,	265	89	33 ...	1823,	151	37	24 ...
1799,	151	43	28 ...	1824,	199	54	27 ...
1800,	250	68	27 ...	1825,	419	120	28 ...
25 years	7,017	2,277	32½ ...	25 years	3,743	1,118	30 ...

TABLE II.—*Admissions into the Smallpox Hospital in the year* 1825.

	Admitted.	Cured.	Died.	Rate of Mortality per cent.
(A.)—Casual Smallpox in unprotected,	263	156	107	41
(B.)—Casual Smallpox after vaccination,	147	135	12	8
(C.)—Casual Smallpox after inoculation,	2	1	1	...
(D.)—Eruptive diseases not variolous,	7	7	...	...
Total,	419	299	120	29

Report to the Under Secretary of State, by the President of the Vaccine Establishment.

SIR, *January* 25. 1826.

In obedience to the orders of Mr Secretary Peel, the Board of the National Vaccine Establishment proceeded without delay to consider the Report of the Physician of the Smallpox Hospital. The only part of that Report which seemed important, was that which stated that twelve persons had died of smallpox, in the Smallpox Hospital, after vaccination.

To authenticate this fact, if it were a fact, the Board requested the attendance of Dr Gregory, the Physician of the Smallpox Hospital, and author of the Report; and they believe they cannot meet the wishes of the Right Honourable Secretary, for information on the subject, and for a refutation of the statement, if it could be refuted, better, than by subjoining the questions put to Dr Gregory, and the answers given by him.—They were as follows:

Q. When a person has been vaccinated successfully and effectually, do you not expect to find a cicatrix indicative of this in the arm?

A. Most certainly.

Q. Will you describe the character of the cicatrix which marks a perfect vaccination?

A. It should be very distinctly defined, perfectly circular, with indentations, and of a size not larger than that of a small wafer, or of a sixpence.

Q. Did this characteristick mark of a perfect vaccination appear in the arm of John Richardson?

A. Certainly not; and with regard to all the rest of the twelve, excepting William Johnstone, the characteristick mark was wanting.

Q. Then you would have been justified in concluding that their vaccination had been imperfect and ineffectual, such as could not protect them against smallpox at any subsequent period of their lives?

A. Such marks ought not to have been received as evidence of the peculiar protection of vaccination.

Q. In fact they might as well not have been vaccinated at all?

A. I believe as well not vaccinated at all.

Q. Have you any other proofs of their having been vaccinated previously to their taking the smallpox, of which they died?

A. No other distinct proofs.—They all, meaning the twelve persons, had the persuasion that they had been vaccinated. I am, &c.

HENRY HALFORD,
President of the Board of the National Vaccine Establishment.

Henry Hobhouse, Esq.
Under Secretary of State, &c. &c. &c.

II. PRACTICE OF SURGERY.

Case of Extensive Fracture of the Cranium, with Stupor and Slow Pulse, cured without Elevation of the Separated Bone. By JAMES WHITE, Surgeon, Windmill Street, Edinburgh.

INJURIES of the head constitute a class of accidents of peculiar interest to the surgeon, both on account of the importance of the organs implicated, and of the difficulty sometimes experienced in the treatment. In presenting the following case of fracture of the cranium to the notice of the profession, I have been led by a desire to place on record an instance of more than ordinary severity which terminated favourably.

About 11 o'clock on the night of the 24th of May 1822, Mr W. H., a large strong man, was pitched upon his head from a gig, when in a state of intoxication. He was taken up in a state of insensibility, and carried home. On visiting him shortly after the accident, I found that he had received an extensive and lacerated wound of the scalp of the forehead. The os frontis was denuded of its pericranium, and a fracture of that bone of great extent could also be distinctly traced. The fracture extended in the line of the sagittal suture, and directly backwards, as far as the coronal suture, downwards into the orbit, laterally separating the squamous portion of the temporal bone from the parietal, and upwards in the course of the coronal suture. The fractured portion, which was about four inches square, could be moved with the fingers, but was not depressed. He was still in a state of stupor, and his breathing somewhat laborious. Having cleaned the wound, so far as it could be accomplished by means of a sponge and warm water, I sent for Mr George Bell, who agreed with me in thinking, that no further abstraction of blood was necessary at that time, as he had lost a considerable quantity on receiving the injury, and was beginning to recover slowly from the state of insensibility into which he had been plunged. We therefore directed that a large bread and water poultice should be placed over the lacerated teguments.

On the following morning at 9 o'clock, we found our patient had passed a restless night, and that his pulse was full and bounding, beating 20 strokes in the minute; 24 ounces of blood were taken from his arm, which he bore well; and he was also directed to take an ounce of the vitriolated magnesia, dissolved in a pint of the decoction of senna leaves in divided doses; the medicine procured several copious evacuations in the course of the day; but as his pulse still continued full when we visited him in the evening, 20 ounces of blood were again taken from the arm, his head shaved, and a fresh poultice applied to the wound.

26th.—On removing the dressings, the wound looked clean, and appeared to suppurate at some points; the edges of the flaps were placed together, and the saturnine lotion applied to all that part of the head which was not covered by the poultice. In the evening, as his pulse felt hard, and he complained of headache, 24 ounces of blood were taken, and he was ordered to repeat the decoction of senna, &c. in the morning.

27th.—Had some refreshing sleep during the latter part of last night; pulse 85 and softer; the blood taken yesterday exhibits a thick buffy coat, and is much cupped in all the vessels; thirst moderate, and tongue pretty clean; directed to take a wine glassful of the following solution every three or four hours:—sulphatis magnesiæ oz. iij.; tartratis antimonii gr. ij.; aquæ fontanæ lb.iss; solve. In the evening, although the medicine had operated freely, he still complained of headache; he was therefore bled to 12 ounces, and expressed himself as being much relieved.

28th.—Blood taken last night is somewhat buffy; passed a tolerable night, pulse 80, soft; bowels open, and wound looking clean and healthy in general, but the upper flap appearing to be sloughing, though to a slight degree.

31st.—Has had the barm poultice applied to the lacerated scalp during the last three days; several small sloughs have separated; his pulse full, and rather hard. Eighteen ounces of blood were taken.

From this date he continued to improve in his general health, the wound, too, looked well, and by the 5th of June the sloughs had nearly all separated; a large portion of the os frontis, however (3 inches square) was visible, being entirely denuded of its pericranium. At this stage, my friend Mr Benjamin Bell, Surgeon, made a sketch of the parts; and I have no doubt but that he will feel happy in showing it to any member of the profession. Shortly after this period, and after the sloughy edge of the sore had come away, healthy granulations shot out from the greater part of the denuded surface of the bone.

Several small exfoliations were removed subsequent to the 28th of July, and on the 3d of October I ceased to attend him, the whole wound having cicatrized, and my patient being restored to health, and complaining of no uneasiness whatever.

Case of Hare-Lip, complicated with the Division of the Palatine Arch, and with loss of continuity of the Maxillary Bone, cured by Compression. By Dr Pointe, Clinical Professor at the Secondary School of Medicine, Lyons.

On the 18th March 1825, a newly born child was brought to me, affected by the triple division of the upper lip, of the palatine arch, and of the velum palati. This defect of conformation was situate a little to the left of the median line; anteriorly the fissure of the bone was much larger than in the remainder of its extent, principally on the left side, where there was a loss of continuity of the alveolar process. The mucous membrane of the nose, which was of a deep red colour, was, in a great measure, exposed; the nose was remarkably thrown back to the right; in short, the whole of the face was deformed and of a hideous aspect. This child was sent to me from a neighbouring town, with a request that I would find him a nurse who would devote her cares to him during the short time such a deformity might permit him to live.

I had just before read in the journals the notice of an ingenious operation practised by Professor Roux, to obtain the reunion of the divisions of the palatine arch. The principal idea was then suggested; I had turned my thoughts to this subject, when the infant whose history I am relating was consigned to my care.

It appeared to me advantageous to profit by the softness of the bones, and the activity of their vital properties during the first days of existence, in order to obtain a re-union of the hard parts, analogous to that which we obtain for soft parts in the operation of the hare-lip. I held a consultation with Drs Pratt and Montain; they approved of my idea: the method of the operation was discussed and concluded upon. Dr Montain, in a similar case, had already attempted to obtain the same result. He had employed, in order to obtain it, the tourniquet of Petit, applied upon the cheeks; but this means had not acted in a manner sufficiently efficacious; it had produced some scars, and the experiment had shewn the necessity of applying the compressive means immediately upon the gums. In consequence, M. Bouchard Jambon, was entrusted to make the instrument that we shall shortly describe; and, on the 25th April, M. Montain proceeded in the operation in the following manner. The child was placed upon the arms of his nurse, and his head firmly held by an assistant. The operator, with a cutting bistoury, which was convex, for an extent of four lines, towards its extremity, made deep incisions upon each of the edges, which the fissures of the palatine arch displayed. The mucous membrane when cut retracted quickly, in such a way, as only to leave to these little wounds a breadth of one or two lines. The next attempt was to make this division disappear, by bringing its edges together. The instrument with which this second indication was attempted to be fulfilled, was made of iron, and represented the four-fifths of a circle, intended to surround the head without touching it. One of its extremities was divided into two branches, of which one was rendered movable by means of a hinge. This movable branch, which was on the left, and the extremity of the right side, had each a double curve before their termination, intended to bring the extremities more forward, and to keep the instrument further from the commissures of the lips, which it would have wounded, but for this construction. In short, this compressive instrument terminated on both sides by a plate, curved inwards, slightly concave, oblique from the front backwards, and from the inside outwards, six lines long, and three broad. These two little plates, defended with lint, were placed immediately upon the alveolar arches, to which they were fitted in the most exact manner. The remainder of the instrument was insulated from the head, the anterior half included; a cap of white iron, three inches in diameter, likewise defended with lint, was placed upon the upper fontanelle, and supported upon the bone of the cranium. By the aid of a vice, attached to the superior part of the circle of iron, and which acted upon this cap, the whole bandage was preserved in an elevated position; and, consequently, it was prevented from slipping from the alveolar edge, while it was directed downwards. A leather string, fixed near the extremities, and susceptible of being shortened by means of a buckle, kept the instrument back; and a second string, parting from the first, and directed upwards towards the middle of the instrument, was also fixed by means of a buckle, and completed the firmness of the adjustment; to conclude, on the left a second vice crossed the inferior extremity of the circle, upon which it found a solid point of support, so as to compress with its point the corresponding movable piece; and, by drawing together the two plates before mentioned, tended to re-unite, and to keep re-united, the two portions of the divided palate. This re-union having been thus obtained, its first effect was to stop an abundant hemorrhage, caused by the incision of the mucous membrane of the palate. The child's mouth was then cleared of a very large quantity of clots of blood; he swallowed immediately after some spoonfuls of milk, with considerable avidity, and was laid down in his cradle; he appeared to suffer little from the restraint which the application of this machine had necessarily caused him. During the night he felt, however, a little agitation; but the following day, the 26th, he was calm; only the mucous membrane of the palate, at the place which was operated upon, became puffed up, and very red. On the 27th, this puffy swelling had increased; there was likewise turgescency of some parts of the face, particularly towards the forehead and eyes: the compression produced by the cap was the cause of it. The two vices were a little loosened, which appeared to give ease. On the 28th the compression was still more diminished, and the instrument removed. The reunion of the palate appeared already solid; nevertheless, there were placed upon it two graduated compresses upon the cheeks, and above a rolled bandage, from the fear that the child's cries might cause the disunion of the parts.

On the 29th M. Montain performed the operation for the hare-lip. Two circumstances determined us not to put it off to another period, namely, the necessity of preserving for some time a force which might tend to keep the two sides of the upper maxillary re-united, and the advantage of profiting by the habit of being compressed, which had now become tolerable to the surrounding parts. Every species of bandage was taken off towards the end of May.

The cure of the hare-lip by the operation has succeeded in giving the features of this child a very tolerable aspect; the nose alone remains a little thrown to the right. Might this deformity have been rendered less sensible, by employing a compressive instrument better contrived? That which we have described had only one movable branch; in securing it by means of the lateral vice, this part was inclined only inwards, and rather high up, and thus tended to direct the left portion of the maxillary rather high up and to the right. It would perhaps have been preferable to have had on the two sides of the instrument a branch equally movable; so that its two extremities, brought towards each other at the same time, would have tended to give the features more symmetry and regularity; but the congenital disorder was to such an extent, and the advantageous change obtained by these two operations was so sensible, that it is difficult to satisfy ourselves that a better result could have been arrived at, by following a different mode of proceeding.

The principal indication consisted in the bringing together, and re-uniting, two portions of the upper maxillary bone; this has been fulfilled. The reunion has been accomplished with ease and promptitude. This is the important practical fact that I have thought worthy of being made public.

The division of the velum palati, which still subsists, will be operated upon according to the method of Professor Roux, when the more advanced age of the child will permit it.

Extirpation of a remarkable Tumour of the Abdomen. By Signor Ambrogio Basletta, First Surgeon of the Hospital of Vigevano.

Signora M. M. was about 40 years of age. She had been married a few years, and had borne two children. She was of a constitution not very robust, and had irregularly and sparingly menstruated at the beginning of the present year. The tumour was situated in the superior part of the epigastric region, being of the size of a turkey's egg, of a spheroid figure, and, upon the patient standing upright, falling down by its weight towards the pubes, for which reason it projected very little above the level of the skin. Upon stretching forward, and feeling it with the hand, the patient confessed to no absolute pain, but to a sort of internal tenseness; and, upon pushing it with the finger, it seemed very hard. I was of opinion that the extirpation of the tumour was desirable, suspecting it to be of an adipose or sarcomatous nature; and as it was evidently increasing, I persuaded her to submit to the operation; which she underwent on the 13th of May *.

The patient being placed in a horizontal position, Dr Ayna, who was my coadjutor on the occasion, raised the tumour as much as he could, and made an incision to the extent of five fingers' breadth or more. It was then easy for me to detach it from the integuments, and from the fat which covered it anteriorly and at the sides. But, upon attempting to insulate it on the posterior part, where it was inclined to the left of the *linea alba*, what was my surprise to find that I was plunging to the bottom of a cavity! Giving way, for a moment, to reflection, and assuring myself that no viscera were within the cist, I resolved to complete the detachment, being aware, from my own experience, as well as from that of others, that, although the peritoneum, which seemed to line the tumour, might be cut, this injury was not necessarily mortal. The tumour, upon being entirely raised, exposed to view an entanglement of the small intestines, which attempted to make their escape from the abdomen, but which my learned coadjutor has known, when immediate compression has been adopted, to be easily kept in their place. After having, with a soft sponge, cleared the wound from the very little blood which appeared, I brought together the lips of it, and performed gastroraphy, fixing upon the edges, which were united, a small fold of lint spread with simple ointment; and, upon this, I placed transversely slips of adhesive plaster; concluding the dressing with a graduated compress and a circular truss. Although the patient had not suffered great pain during the operation, which lasted but a few minutes, we immediately ordered, to tranquillize her, an anodyne mixture.

We found that the tumour was surrounded by a smooth cist, which, upon being cut across, appeared to be of the thickness of three or four lines; and, from the resistance which it made to the knife, I was confirmed in the suspicion which I entertained of its being formed by the peritoneum. The substance composing the tumour, which was of a glandular form, and here and there mixed with black spots, I do not know how to compare better than to a testicle, which, however, it a little exceeded in consistence.

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* It is prudent to extirpate these tumours at their commencement, as well to avoid the inconvenience, as the danger, which may result from the immeasurable increase to which they may arrive. See the singular extirpation of an adipose tumour, of 58 pounds weight, in the case of Count Tedeschi of Verona, performed by Fr. Geo. Luigi Portaluppi.

Some hours after the operation, the patient was surprised by unlooked for pains in all the abdomen. She vomited the food that she had taken a little before the operation, and complained that the effort of vomiting produced the feeling that the lips of the wound would, at every moment, be rent open. I hastily cut the points of the stitches, and lifted up the small cylinder; but observing that nothing had come out of the cavity, I contented myself with uniting the wound, by means of long strips of adhesive plaster, and placing above it small pledgets of lint, and above the whole a compress, which was retained by means of large circular fillets. I then let blood from the arm, but to the amount of ten ounces only, as I had to treat a subject who was not very robust, and who had, for several months, been harassed by sufferings of the mind, created by a dread of the effects of the local affection. I afterwards ordered an emollient ejection, which, although only retained in part, procured her some fluid alvine evacuations of a bilious colour. Towards evening, the pains were much assuaged, the vomiting quieted, and the belly much softer. During the night, however, she was much agitated; and, on the 14th, in the morning, she complained afresh of wandering pains in the abdomen; but what molested her most was a pain in the right epicolic region. Six leeches were applied to that part, and an emollient injection given, after which the pain was nearly calmed. There was also a free evacuation; the fœces, however, appearing constantly fluid, and of a yellowish-green colour. The belly was but a little swelled; the wound appeared united; and the day passed less unfavourably than the antecedent one. In the night she enjoyed some hours of repose, but was afterwards attacked by violent pains in the loins. On the 15th, early in the morning, twelve ounces of blood were taken from the arm, which shewed a buffy coat. An emulsion of gum arabic with castor oil, in divided doses, was prescribed, along with a decoction of tamarinds, to allay her thirst, in which was mixed small doses of soluble tartar. The uneasiness in the loins appeared eased, but a pain in the right hypochondrium succeeded. To this part, therefore, six leeches were accordingly applied, when the pain instantaneously disappeared, but only to fix itself in the epigastrium. Five leeches were afterwards fixed to this last named part, and an emollient injection administered, which procured frequent watery alvine evacuations of a greenish colour, mixed with mucus. The belly then became flattened; and, towards mid-day, I perceived that the wound was united; but fearing a little blood might stagnate under it, I opened it below, stretching the lips of it with the fingers. Nothing was discharged at the moment; but, towards evening, some violent efforts to vomit occurring, there issued out some bloody serum, which continued to flow during the night, when the patient was rather better for about an hour. Afterwards, new pains were excited in the epigastrium; and, along with them, the vomiting returned, so that she could swallow nothing. On the 16th, in the morning, I ordered an effervescent mixture, but even this was rejected. The evacuation having at length stopped for some hours, an emollient injection procured, as before, abundant alvine evacuations; and, to subdue the intense thirst, a simple decoction of tamarinds was ordered. The fever, which before had been uniformly slight, became strong, and the vomiting obstinate, until, by a strong effort of the stomach, the wound was forced completely open; on seeing which, I introduced a finger, and discovered that a portion of the iliac intestine had made its way out of the belly, by the wound in the peritoneum. This I quickly replaced; and, resorting to the same dressing as if I had been operating for a hernia, put above it a piece of wax-cloth, steeped in oil; and, upon this, some balls of lint; and, gradually, little pledgets; the whole being pressed down with circular bands and a folded handkerchief. The patient was very uneasy; her belly became constantly more swelled, although less painful, and her life appeared in danger. From this time, until after dinner, the vomiting ceased; she received opening medicine towards evening, and had frequent alvine dejections of a very mucous description, with considerable flatulency. The vomiting returned to make things worse, and the vital powers, which became sensibly weakened, shewed the patient to be seized with gastro-enteritis. A simultaneous peritonitis was also greatly suspected. It would only be to trifle with the patience of the reader were I to minutely describe all the sufferings which the patient underwent from this day until towards the end of June, when she overcame the great obstinacy that this consecutive affection had shewn. It is sufficient to say, that, notwithstanding symptoms of weakness were apparently increasing, stimulants seemed the more inadvisable every time we attempted to try them. Her costiveness seemed unconquerable, although emollient injections and even those of tobacco were tried; but it was combated by injections of tartar emetic; and, notwithstanding her great emaciation and prostration of strength, symptoms of abdominal irritation lasted until that time, obliging us always to keep the patient to a severe regimen, and to use gentle purgatives, interposing, from time to time, leeches, whenever the fever, the pains, the heat, &c. &c. denoted an increase of the phlogistic state of the abdomen.

On the 25th of June the patient began to come out of bed, having been furnished with an elastic band for the abdomen. After she had risen, it seemed as if the intestines could make their way into all the anterior part, and half of the lower belly, on removing the abdominal dressings. The patient continued after this to gain strength, using, from time to time, in order to facilitate the alvine dejections, emollient clysters; for which were also substituted some opening pills. The wound delayed cicatrizing until towards the beginning of July, although it was touched daily with the nitrate of silver, and covered with dry lint.

On the 10th of July the patient made me observe a small tumour, of the size of a nut, situated on the left of the linea alba, in the place to which the extirpated tumour had been attached, and where the peritoneum had necessarily been injured. I knew it to be a small ventral hernia, which re-entered into its place when she assumed the horizontal position. I recommended a compress, with lead enveloped in it; this was held in its place by a single band, and thus nothing was disturbed. A slight faintish state, accompanied by odontalgia, obliged her still to keep her bed for some days. She was, however, freed from this uneasiness, by taking an ounce of the pulp of cassia, and using emollient injections. Afterwards, having shewn some gastric symptoms, she took some spoonfuls of an infusion of rhubarb in water, and some grains of tartrate of antimony, by which she was sufficiently purged, and acquired an appetite, and, along with this, her digestive and muscular powers. In the month of August, she had the satisfaction, after so many and such severe sufferings, to go out of the house and take a long walk, proving to her physician that she had acquired no little relief.

Observations on the Foregoing Case.—Many celebrated authors have written concerning tumours of the abdomen, which were formed of fat. *Morgagni* speaks of such a formation in his great work *De sedibus et causis morborum.* My preceptor *Scarpa* dissected two of these, which were found in a dead subject; and operated on one in the case of a lady his patient. *Klinkosh*, *Pelletan*, and *Tartra*, have written concerning the operation of lipocele.

Monteggia has found these tumours exist in the crural arch, and in the inguinal ring. Lawrence, in his excellent treatise on hernia, speaks of a collection of fat along the spermatic cord, and of fatty tumours of the linea alba. Cloquet found a similar tumour in the crural arch, and the greater part of practitioners are agreed in giving them the name of fatty hernia. The perilous symptoms with which they are many times accompanied, are equal to those of strangulated hernia. This is confirmed by the recent case published by Dr Angelo Macario, surgeon of the civil hospital of Milan, in which he describes in a masterly manner the operation of a crural or fatty hernia, complicated with symptoms of strangulation, narrating the event obtained, foretold by the watchful and practised eye of the before-named cavalier Palletta. But no one has been aware of any of these tumours shewing themselves in the linea alba, where they are covered with a sack; for which reason the case given by me is without doubt very different. If, then, the lipocele, which is only situated on the anterior part of the peritoneum, causes so much peril, occasionally inducing a fatal peritonitis and enteritis, how much more was to be feared from the glandular tumour described, which having grown behind the peritoneum, was invested by it? It would certainly have been imprudent to defer the operation longer, since, besides the inconvenience that the patient would have hazarded from the increase which the tumour must have daily obtained, many untoward events might have occurred, which, in the sequel, would have either rendered the operation impossible, or would have been attended by the inauspicious termination of the cases narrated by Dr Macario.

The disposing cause to such a disease, I do not hesitate to refer to two accouchments which this lady had undergone; her parturition not having taken place at a youthful time of life, and not having been an easy one. She had a retroversion of the mouth of the uterus, owing to which, or to the efforts of childbirth, a passage was made for a small portion of peritoneum, which remained twisted in the linea alba, and in this manner the glandular swelling, with which was invested the internal division of the membranous involucrum, began to increase; and although it was situated in the inferior part of the navel, as may happen in females who, according to Scarpa, may have had many children, an easy access through the linea alba would be afforded to the peritoneum, and to the small glandular tumour that may supervene to the extirpated tumour.

By the sequel of the case, it may be seen how the lowering and cooling method had triumphed, and how many times I had been obliged to suspend even the slightest stimulant. This shews how illusory is the dreaded weakness that appears to be manifested in disorders of the alimentary canal.

It is worthy of observation, that the constipation of the bowels, which could not be conquered for some days by emollient injections and by tobacco, was overcome by injections of the tartrate of antimony, which may be advantageous in incarcerated hernia.

There is no doubt but that the sack of the tumour was formed by the peritoneum. This was indicated by its thickness and smoothness. The tumour, when detached, exposed to view the naked and protruding intestines, which, having been put in their place, came out anew on the third day of the operation, after the continued effort of vomiting. In the end a small hernia occurred, which would certainly not have appeared, if, after the operation, the gastroraphy which had been executed could have been maintained, and if the abdomen had not been forced to an enormous dilatation by the pneumatic excitement of the intestines. Under other circumstances, the peritoneal wound would have contracted adhesions. It may perhaps be of importance to advert to the inconvenience which remains after the operation; but ventral hernias are scarcely ever of great danger, and this one, besides being of less size than a nut, was easily reducible, and kept in its situation by means of a compress put upon it along with the truss, which the patient was constrained to wear after the first lying-in, on account of the relaxation remaining in the parietes. This relaxation was principally in the middle part, and anteriorly, where, during the pregnancy, the *fundus uteri* had been unduly extended, and, after having been disburthened, had remained like a purse hanging down, towards which the viscera had gravitated.

I certainly now entertain no regret in having performed the above operation on my patient, although it was at the expence of so much suffering to her. On the contrary, considering the inconvenience that might have been incurred, as well as the perils encountered by those who would retain such a tumour in the lower part of the abdomen, I freely confess that, were a similar case to recur, I would pursue a similar mode of treatment.

III. MIDWIFERY.

History of a Rent of the Womb, rendering the Cesarian Operation indispensable.

A female of Parma, aged 44 years, the mother of five children, had arrived without any accident at the ninth month of her sixth pregnancy, when, in the morning of the 9th August 1817, she felt labour pains. She was seized with a syncope, accompanied with vomiting. The midwife, who had just commenced her operations, directed that she should be carried to her bed immediately. At the moment when the patient was raised, in order to be placed there, she experienced, as she conceived, the sensation of a rent in the belly, and, on this occurring, thought she felt two children in its cavity. A surgeon was called in, who tranquillized her by the declaration that the efforts of vomiting had done nothing more than changed the position of the fetus. However, the midwife, on observing the progressive augmentation of the volume of the belly, the continuation of the vomiting, and the increasing difficulty of respiration, called in Professor Rossi, who, after a very minute examination, discovered that the womb was rent. The Professor then lost no time in consulting with his father and the most distinguished Professors in the University, who all considered the cesarian section as indispensable. This operation was accordingly performed by Professor Cecconi, in the presence of the Doctors Rossi, father and son, two hours after the accident. The operator made an incision into the parietes, situated on the inferior left portion of the abdomen, in the place where the feet were felt. This being accomplished, the feet immediately protruded, and the fetus was drawn out alive.

It is stated that the mother was perfectly cured at the end of forty days, that, at a later period, menstruation was perfectly re-established, and that three years afterwards she was delivered of a child which lived fourteen days. But M. Simon qualifies this last statement by adding, that, since the operation, the patient has been afflicted with a very considerable ventral hernia, which occupies the same place as the cicatrix.

Long Retention of a Fetus in the Womb. From the Bulletin des Sciences Medicales.

An abdominal enlargement existed for three years, during which period the patient conceived and brought into the world a well-formed child. Very serious derangement in the system at length disclosed the presence of a fetus in the abdominal cavity. Gastrotomy being practised, gave issue to another child, in which the prolonged residence in its mother's womb had induced partial putrefaction. The patient, after an illness of fifty-five days from the time of the operation, was eventually cured.

IV. ANATOMY (Comparative).

Memoir on the Lymphatic Vessels of Birds, and on the manner of preparing them.

By M. E. A. Leurth, D. M. Read at a sitting of the Royal Academy of Sciences, 16th August 1824.

A fact well worthy of remark in the history of the vessels about to occupy our attention, is, that the ideas which anatomists have formed of them, are connected in the same order as is followed in those relative to lymphatic vessels in general. The existence of lymphatics in the mammalia was already universally admitted. Their true functions began to be perceived, without any anatomist, (in following the path of analogy, which has caused science to advance so rapidly in our days,) venturing to suspect their existence in birds. Although the inquiry into these vessels may be regarded as the most delicate part of anatomy, by industry we may acquire a practical coup-d'œil, which enables us at once to distinguish the lymphatics, however delicate they may be. We can only, then, be astonished at the ignorance which has prevailed on this subject for such a long time. All anatomists, in teaching absorption by the lymphatics in the mammalia, in place of searching for analogous organs in birds, found it more convenient to admit, that, in them, the veins had open orifices, by means of which these absorbed the liquids contained in the intestine. "In volucrum quidem genere, lacteorum loco, venæ mesaraicæ in cavitatem intestinorum hiant [*]," thinking to find the proof of this assertion in the reciprocal passage of the air blown, whether into the mesenteric veins, or into the intestinal cavity.

An opinion, already approaching to the truth, is that given out by Lister [†], who admits very short lymphatics in birds, which directly empty themselves into the veins:—"At sine interventu, ut arbitror, lacteorum, ut brevissimorum, proxime et immediate in venas mesaraicas chylum in ullis animalibus admitti non posse, quod venæ et arteriæ unum et continuum vas sunt, nec sanguinis effusio prohiberi posse videtur, si edita esset; scilicet, si per se et simpliciter finirentur. Ideo e circulo sanguinis nullus egressus est, nisi mediante et arteriolam excipiente aliquo ductu excretorio; ita nec ingressus in istum orbem, nisi chyliferi alicujus ductus. .

"Igitur quemadmodum in homine venam subclaviam, ita in ave venas mesaraicas chylus subit."

I have thought proper to quote the whole passage, because, by it we see that if, on the one hand, Lister has been a bad observer, he has, at any rate, perfectly apprehended the distinguishing characters of veins and lymphatics,—characters which some modern anatomists appear to have misunderstood.

Several anatomists, of whom some were long prior to those we have just cited, appear, nevertheless, to have seen some lymphatics in birds. For instance, Swammerdam [‡] sent to the Royal Society of London, a preparation of the lymphatics of the pelvis of a hen:—"Lymphaticum peculiare ex abdomine gallinæ;" and Jacobæus [§] says, "Vidimus in mesaraeo tria vasorum genera, quorum unum nervosum forsan est, alterum sanguineum manifeste et fortasse arteriosum, tertium remotissimum, quod latius ac tenuius, forsan venosum, licet humorem serosum continens." However vague this expression may be, we cannot, I think, refer it to any thing but the lacteals. Lang [‖] is said even to have found a lymphatic in a turkey; and J. Hunter [¶] saw vessels and lymphatic glands in the neck of a swan.

It is only, however, since the time of A. Monro and W. Hewson, that the existence of these vessels in birds has been regarded as demonstrated. It is to be regretted that the claim to the priority of this discovery gave rise to a dispute between them [**], which ceased only with the death of Hewson. Nevertheless, it appears to me, that each of them discovered the lymphatics in birds, without having had any knowledge of their mutual labours; but the priority belongs to Monro, which is proved by the following passage [*]:— "Quamquam avibus desint, vel saltem adhuc non detegantur vasa lymphatica, in gallo tamen gallinaceo vasculum bis deteximus, quod admirationem excitavit." This was a lymphatic vessel of the testicle that he discovered, after frequent researches to no purpose. Hewson [†] appears only to have seen the lymphatics of the trunk and neck: there is much wanting in the description and engravings he gives of them. M. Tiedemann [‡] is the first anatomist who has given a good description of the whole of the lymphatics in birds; and, finally, M. Fohmann [§], at whose house I first saw the injection of these vessels, has demonstrated, in the clearest manner, their communication with the renal and sacral veins.

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[*] Peyer, Diss. de Glandul. Intestin. cap. 8.—Vid. Parerga Anatomica et Medica, p. 53.—Cons. Perrault, Disser. Anat. d'un Ibis blanc, et de deux Cigognes, dans les Mem. pour servir l'Hist. Nat. des Animaux, tom. iii. p. 68.—Des Anciens Mem. de l'Acad. R. des Sciences.

[†] Martin Lister, Diss. de Humoribus, Amstelod, 1711, 8vo, p. 228.

[‡] Birch's History of the Roy. Soc. of London, &c. vol. iii. p. 312, 1676.

[§] Olig. Jacobaeus, Anatome Ciconiae, in Th. Bartholini, Act. Med. et Philosop. Hafniens, vol. v. p. 247. ann. 1677,-79.

[‖] Chr. J. Lang, Physiologica.—Vid. Opera Med. Omnia, fol. Lip. 1704, p. 99.

[¶] Hewson, Experimental Inquiries into the Lymphatic System, p. 68.

[**] A. Monro, State of Facts concerning the Paracentesis of the Thorax, on account of air effused, and lymph; Vessels in Oviparous Animals, 1770. The Structure and Physiology of Fishes, ch. vii. Of the first discovery of the System of Lacteal and Lymph-Vessels of Fishes, Birds, and Amphibious Animals. Edin. 1785.

W. Hewson, Experimental Inquiries on the Proportion of the Blood, with some Remarks on it, and an Appendix, relating to the Lymphatic System in Birds, Fishes, and Amphibious Animals. Lond. 1771.

I am not aware, since the publication of Hewson's memoir, that any anatomist has doubted the existence of the lymphatic system in birds; nevertheless, on the occasion of the announcement of a general law, by the celebrated author of the Philosophy of Anatomy, M. Magendie repeated the researches of his predecessors on the lymphatic system of birds, and gave the results of his labours in a memoir read at the Academy of Sciences, in 1819. From this memoir [‖], we learn that M. Magendie has only seen the lymphatics of the neck in the goose and swan. As to the rest of the system, he did not discover any trace of it. He concludes from this, then, that lymphatics only exist in the neck of birds, and especially in the neck of those in which he found them; and, in consequence, the veins in birds fulfil the functions of the lymphatics in the other animals.

In a journey which I made to Heidelberg, to see the fine preparations of M. Fohmann, this skilful anatomist injected the lymphatics of a goose in my presence; and I take this opportunity of thanking him for his kindness to me, during my stay in that university. Having given more attention to these researches, in consequence of my Disputation on the lymphatic vessels, and having been fortunate enough to make some new observations in following out these vessels, with a desire to supply the imperfection of the plate of Hewson, the only one which I know on this subject, I have had the honour of submitting my memoir [¶], accompanied with drawings, to the judgment of the academy.

General Anatomy.—The lymphatic vessels of birds differ, in their structure, from those of man, by their valves being less numerous and less resisting; so that I have several times been enabled to inject them backwards. This injection inversely to the course of the lymph has only taken place to a certain extent; and it is only very rarely that I have been enabled completely to inject these vessels.

The lacteals, the lymphatics of the other viscera, and the thoracic ducts, have very feeble tunics; and it rarely happens that a preparation is finished without some of these vessels, and especially the thoracic ducts, being ruptured. It is these ruptures that have shewn me that lymphatic vessels, notwithstanding their extreme tenuity, are, like those of man, composed of two tunics; indeed, the internal tunic, being less resisting, is always broken first, and the mercury is then seen distending the external fibrous coat, and infiltering itself between it and the internal.

In appearance, the lymph of birds seems to me similar to that of the mammalia; but their chyle [**] differs essentially from the latter, by its transparency and want of colour, which may be the cause of the difficulty which takes place in finding the vessels which contain it. As to their development, the principal differences in the lymphatics of birds from those of man, consist in there being none found superficially in the limbs, and in the want of lymphatic glands, with the exception of some glands situate at the superior part of the chest, formed by the lymphatics of the neck, and sometimes of those of the wings. These glands, which offer, in general, the same structure with those of man, are, however, a little softer. In all the other parts of the body, the lymphatic glands are replaced by considerable plexuses, which are situate at the reunion and division of the vessels which constitute them,—dilatations which are evidently analogous to the pretended cells of the lymphatic glands; as in the mammalia, we frequently find two large branches, which, by their reunion, form a trunk, the caliber of which is much inferior to that of each of the branches of which it is constituted. We constantly remark, in the great plexuses of the trunk, considerable branches, which empty themselves into the neighbouring veins, which anew establishes the analogy between these plexuses and the glands, in the interior of which the communications of the lymphatics with the veins, are, in the present day, beyond a doubt.

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[*] A. Monro, Diss. de Testibus et Semine in variis Animalibus. Edin. 1755, c. 12. § 3.

[†] An Account of the Lymphatic System in Birds, by W. Hewson, in the Phil. Trans. 1768, vol. 58, p. 217.; and Experimental Inquiries.

[‡] Anatomische und Naturgeschichte der Voegel, 1810, tom. i. p. 533.

[§] Anatomische Untersuchungen uber die Verbindung der Saugadern mit den Venen, Heidelb. 1821, p. 63.—Trad. en Français par M. Breschet, dans les Mem. de la Soc. Med. d'Emulation, Avril, 1822, p. 136.

[‖] Memoire sur les Vaisseaux Lymphatiques des Oiseaux.—Journal de Physiologie de M. Magendie, tom. i. p. 47.

[¶] I have already published some details relative to the distribution of the lymphatics in birds, in my Essay on the Lymphatic Vessels. Strasburgh, 1824, p. 29–37, &c.

[**] I have since been informed by Professor Dumeril, that he had, a long time since, seen the lacteals of a frozen woodpecker, which had just been killed after having swallowed a great quantity

The last difference between the lymphatics of birds and those of man, consists in their termination by two thoracic ducts, one on each side, which commonly empty themselves into the jugular veins by several orifices.

The birds[*] which I have made use of in my researches[†], are the turkey, the hen, the heron, the stork, the soland goose, the wild and tame goose, and the duck, which I have dissected, some at the amphitheatre of the Faculty of Medicine at Strasburg, and others at Paris[‡]. The latter I owe to the kindness of MM. Cuvier and Breschet, who have aided my researches, not only in granting me the necessary birds, but even in obtaining the necessary instruments from Heidelberg. As I have dissected the goose, the greatest number of times, I particularly refer to it in my descriptions.

Finally, not being bound to enter into physiological considerations, I shall confine myself to observe, that the conclusions of authors who have denied the absorbent faculty to the lymphatic vessels in the mammalia, supporting themselves on the want of them in birds, are inadmissible, by the very fact of their existence, as I believe to have sufficiently proved in my dissertation[§].

(To be continued in our next.)

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of ants, and that the chyle which these vessels contained was white and opaque. M. Dumeril thinks that this opacity of the chyle depended on the animal nourishment which this bird had taken, since it is observed, that, in the carnivora, the chyle is of a milk white, whilst it is more frequently transparent or opaline in the herbivorous animals. After these considerations, I was at first astonished to have always found transparent chyle in geese, although these birds nourish themselves indiscriminately with animal and vegetable substances; and I wished to see if a direct experiment would confirm the opinion emitted above. In consequence, I fed a turkey and goose with flesh for several successive days; and I killed them when in full digestion, expecting to meet with white chyle, in case it was the animal nourishment which gave that colour to it. The chyle, in both, was as transparent as was that of those birds I had previously killed, without having specially fed them with flesh. It appears to me, then, proved by that, that it is not the animal nourishment which gives opacity to the chyle. Some other arguments may still be brought forward in support of this proposition. We find opaline and sometimes even white chyle, in the lacteals of the horse and ox, and these animals incontestibly only nourish themselves with vegetables; and, on the other hand, we ought constantly to find the lymphatics of the other parts of the body filled with an opaque lymph, because they only absorb, in any considerable quantity, the particles of the body itself. Now, common experience tells us, that, in the physiological state, they always contain a transparent lymph; and it is only in very rare cases, and in the state of disease, that, in them, we meet with opaque lymph, as in a case where M. Dupuytren found them gorged with pus; and, in another, where my father found them filled with putrid sanies. Nevertheless, the observation of M. Dumeril is a fact which must be credited, although we are not able to explain it.

[*] M. Fohmann has injected the lymphatics of the stork, of the heron, of the bittern, of the goose, of the duck, and of the buzzard.

[†] In a buzzard which M. Magendie gave me to examine, I sought the lacteals in vain, no doubt because the bird had been a considerable time killed, and the necessary ligatures had not been applied to the vessels of the mesentery. But M. Fohmann having been more fortunate than I, has demonstrated the existence of the absorbents in birds of prey.

[‡] The preparations in the Museum of the Faculty of Medicine, at Paris, and of the cabinet of Comparative Anatomy in the Garden of the King, are of the number. M. Breschet has obligingly presented some of these first preparations to the Philomathic Society.

[§] Essai sur les Vaisseaux Lymphatiques. Strasburgh, 1824, § 4;—Usage des Vaisseaux Lymphatiques, p. 44. et suiv.

Notice upon the Laced Viper, (Coluber lemniscatus, L.) By M. H. DE BLAINVILLE.

THIS species of viper has before been noticed, on account of the difference which it presents when compared with others of its kind, and on account of the great activity of its venom. M. Schneider, in fact, when considering its elongated form, cylindrical body, the smallness of its head, the form of its scales, and the small opening of its mouth, has thought that it ought to form a distinct genus, to which he has given the name of *Elaps*,—a genus which has been adopted by many zoologists. M. Mollien, during his voyage in South America, appears to have had an opportunity of verifying the great danger of the bite of the serpent: it is this which, at his return, determined him to send to the Philomathic Society, through the medium of M. Larrey, a specimen well preserved, to see if there could be discovered in the organization of this viper, any peculiarity in correspondence with its known habits. M. H. de Blainville, who has been entrusted with this examination, could not remark any thing in the venomous apparatus which differed from what existed in other vipers, except a development, at least double of the venomous gland, nearly as large as the mass of the muscles of the lower jaw. Hence, we may conceive, that this more considerable quantity of venom ought to have a deleterious action proportionally more quick and forcible. In the remainder of the organization, M. de Blainville has observed nothing worthy of attention, except the smallness of the squamous bone, and of the breast bone, which limits the opening of the mouth; and above all, a much more considerable number of vertebræ than in any of the species of venomous serpents that he has dissected, and this not only in their total number, but even supposing the length of the animals compared were equal. Thus, the common vipers have only 190 vertebræ altogether, comprised in the trunk and the tail, in a length of 0,532, whilst the laced viper has 271 in the body and 42 in the tail, in all 315 in a length of 0,825, which makes a quarter or a third more. The ribs are consequently more numerous and thinner. This difference in the number of the vertebræ ought to have some influence upon the mode of locomotion, and so much the more, as the transverse apophyses are also much less large. Perhaps this species of viper may be able to climb trees, and may have a movement more rapid than the others, which are very slow animals. In fact, M. de Blainville made, a long time since, the observation, that the parts of the vertebral column which ought to serve as organs of apprehension, such as the tail of monkeys with a prehensile tail, the body and the tail in the boas, in pythons, and in adders, have always a greater number of vertebræ than the same parts in kindred animals which do not enjoy this faculty, as in the monkey with a loose tail, and in serpents which creep only on the ground.

V. PHYSIOLOGY.

Remarks on the Teeth, the Hair, and the Fat, which are sometimes met with in Ovaria. By M. A. VELPEAU.

M. Velpeau, in his memoir, read to the Philomathic Society, on the 9th of April, brings forward some new facts, discusses those which have been long since known, and proposes a new explanation of certain others to be found among them.

The first of these cases, observed in 1823 at Paris, was of a female, who died at the Hospital St Louis. M. Velpeau found, 1*st*, The uterus more bulky than in the natural state; 2*d*, The ligament large, the Fallopian tube and the ovarium of the right side in a sound state; 3*d*, A tumour as large as the head of a male adult, and situated on the left superior angle of the womb.

This tumour, which appeared to him to be the ovarium, was formed by a cist, the parietes of which amounted in several places to at least a line in thickness, and it contained several pounds of a yellowish fat, appearing, as it were, coagulated. A great quantity of hair existed in this fat, amounting to three inches in length; also an organized body, completely separated from the fat by cellular strings, some of which were attached to the sac. In this substance was detected bone, portions of flesh, and skin covered with hair, similar to that which was detached. The principal bone appeared to form a part of the great ala of the sphenoid bone, also of the palatine bone, and of the zygomatic process of the temporal bone. The skin, intimately united to the soft parietes which separated it from the bone, and in which muscular fibres certainly existed, was pierced by a great number of pores, in which hairs were implanted.

The second case reported by M. Velpeau, had a great resemblance to the former one; it was of a female, seventy years of age, who had died in the Hospital of Tours, in a state of mental imbecility and of hydrothorax,—the sequel of several chronic pleurisies. In the abdomen was found a tumour of the thickness of the head of a fetus which had come to its full time, being enveloped by the peritoneum. This we must regard as the right ovary enormously developed. This tumour, formed by a very thick fibrous pouch, contained, 1*st*, several pounds of a sort of fat, which might be compared to that of melted goose grease; 2*d*, A considerable mass (as if stuffed with hair) of a reddish-white colour, and of the size of a large nut, enclosing a part of the maxillary bone, with an incisive tooth exactly like that of an adult, the gummy and labial portions corresponding to it; and, lastly, hair from 3 to 5 inches in length, implanted in the skin of the portion of a lip.

The third observation of M. Velpeau was made upon the dead body of a female, in the dissecting rooms of the Ecole de Medecine. The uterus was a little more developed than usual, and of a softer texture. The round ligaments and the Fallopian tubes were so interlaced, that it was difficult to determine to what side they belonged. Two tumours were found attached to the angles of the matrix, by tendons like the ligaments of the ovarium. The one contained within a cist, the interior parietes of which shewed the follicles from which hair was developed, a certain quantity of white soft granular fat mixed with hair of a chesnut colour; besides, quite at the bottom, the three first molar teeth of a side of the jaw in a natural position perfectly developed even to the corona, but only adhering to the sides of the sac by very inconsiderable fibro-osseous flakes. The other tumour, less in size, merely inclosed a shapeless mass, having an osseous appearance, in which no very distinct part could be recognised.

The fourth and last observation chiefly dwells upon a fact discovered by M. Velpeau himself, on the body of a woman whose organs of generation were explained by him. One of the ovaria, scarcely larger than the other, which was healthy, appeared to him transformed, as it were, into a small sac containing grey hair, for the most part in a free state, and reunited in a small clew, whilst the others were adherent to the exterior of the sac.

In dissecting this specimen under the inspection of the commissaries (Messrs Blainville and Serres) named by the society, M. Velpeau has ascertained, that this tumour, which shewed at its base a small cartilage of the form of an officer's gorget, was so perfectly distinct from the entire ovary, from which it was separated by the membrane proper to it, that it was really developed in the extremity of its ligament. He has equally ascertained that, in the second observation, the largest of the tumours was by no means in the ovary, which existed, although flattened and reduced, below it.

Among the different explanations which have been given of this fact, the principal ones are three in number, viz. that of the *nisus formativus* of Blumenbach, according to which these bodies would produce themselves spontaneously by a plastic force;—that of Coley, that these bodies are the result of an incomplete fecundation; and that of Haller, that they are the remains of a natural fetus, originally of regular conformation. M. Velpeau inclines towards the latter opinion, against M. Meckel's view of the case, which he refutes; but, as it did not still appear to him susceptible of application to all the facts collected, which he divides into three classes, M. Velpeau, resting upon such general considerations as an evident relation to the structure of the skin, and of its accessory parts, proposes to admit, for the explanation of those of the third, where the ovary contains merely fat, hair, or teeth, or any one of these three substances, that these bodies have been actually produced by the parietes of the cavity in which they have been found. Thus he places them in the same predicament as those where analogous substances have been found upon the tongue, in the gullet, the intestines, the gall-ducts, the bladder, &c.

M. Blainville, however, in his report upon this memoir of M. Velpeau, has made the observation, that these three kinds of bodies were evidently products of the cutaneous envelope, and not of organs. Nor has he thought himself justified in adopting what approaches sufficiently to the support of this new theory, because he could not possibly admit, that, either within the ovary or its ligament (for he supposed, what is very probable, that these bodies are never in the ovary itself), we can trace any prolongation of the cutaneous envelope.

We must, at first, carefully distinguish those cases wherein it is a question if substances like those adduced by M. Velpeau, are found in individuals of the male sex at every age, or of the female sex, evidently too young for us to suppose, even for an instant, that there could be a probability of fecundation.

In all other cases, that is to say, in individuals of the female sex, at an age which can admit of fecundation, we must establish a division, according as the bodies before mentioned may have been found; 1*st*, In the peritoneal cavity, that is to say, in a cist adhering to the ovary, to its ligaments, or to the peritoneum itself; 2*d*, In a cavity having a direct communication with the exterior envelope, that is to say, in the fallopian tube, the uterus, or in the intestinal canal; 3*d*, and, *lastly*, in the tissue of the parts themselves.

In short, the explanation would be necessarily different.

The facts of the first division cannot be explained by a *gemination*.

Those of the second would not be so, but by admitting an extra uterine impregnation, mediate or immediate, of a complete or incomplete fetus.

The explanation of the facts of the third case would still be entitled to a place after the same manner, without having recourse to the reasoning of M. Velpeau, but it would be necessary to do it effectually, if the bodies produced were actually in the intestinal canal.

Lastly, If the existence of hair in the tissue of parts had been well proved, without any anomalous disposition of the surrounding integuments having been remarked, there would exist a necessity for recurring to the *nisus formativus* of Blumenbach *.

COMPARATIVE PHYSIOLOGY.

On the Changes which the Ovum of the Frog undergoes during the formation of the Tadpole.

In the year 1822, Sir Everard Home laid before the Royal Society of London, a series of observations on the progress of the formation of the chick in the egg of the pullet, shewing, that, in the ova of hot blooded animals, the parts first formed were the brain and spinal marrow. He has now brought forward a similar series on the progress of organization in the ova of cold blooded animals, with the view of comparing together the first rudiments of organization in the ova of these very different classes of animals. His conclusion is, that in both the same general principle is employed in the formation of the embryo. We shall now give the result of his observations.

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* A species of fanciful causation that deserves to be coupled with the *Vis medicatrix naturæ* of Cullen, and other writers.—Ed.

The ova of the frog are found to have no yolk. By examining them in the ovaria in which they are formed, they will be found to consist of small vesicles of a dark colour; when they enter the oviducts, they enlarge in size, and acquire a gelatinous covering, which increases in quantity in their course along these tubes; but the ova can neither be said to have acquired their full size, nor to have received their proportions of jelly, till they arrive at a cavity close to the termination of each oviduct, formed by a very considerable enlargement of these tubes, corresponding, in many respects, to the cloaca in which the pullet's egg is retained, till the shell becomes hard.

These large bags, in which the oviducts of the frog terminate, when distended with ova, put on an appearance so like the enlarged horns of the uterus of the quadruped, when they are filled with young ones, that they have, by some anatomists, been called a double uterus. This, however, is an improper appellation.

When the ova are deposited in these reservoirs, they become completely formed, and in a state to be impregnated by the male influence, which is applied to them in the act of their expulsion. As they are pressed upon each other, by being confined in a small space, the gelatinous covering takes on an hexagonal figure, in the centre of which is the ovum.

The ova, when examined by a magnifying glass in a strong light, exhibit an appearance so similar to the molecule in the pullet's egg, as to be readily mistaken for it; but a more attentive inspection shews, that it is only a white portion in the ovum, seen through the covering of the vesicle. When the vesicle is punctured by the point of a needle, the contents are so fluid as to easily run out, leaving the strong transparent membranous bag lined with a fluid like the *nigrum pigmentum*, empty.

Immediately after impregnation, there is no change in the appearance of the jelly, nor of the vesicle contained in it, in this respect corresponding exactly with what happens to the pullet's egg. The first change that is produced towards the formation of the embryo is,—the contents of the vesicle expand, its form changes from that of a sphere to an oval, and, when cut through, its contents are no longer fluid. In the act of coagulation, the central portion becomes of a lighter colour than that which surrounds it; swells out in the middle, and there is a distinct line, by which the two portions are separated from one another; the central part, in its future changes, is converted into brain and spinal marrow, and after these organs have acquired a definite outline, the heart and other viscera are seen forming in the darker substance.

This does not exactly correspond with what takes place in the pullet's egg, that of the frog having no yolk. In the pullet's egg, the part within the inner circle of the molecule, when impregnated by the male, undergoes the necessary changes to form the brain and spinal marrow; the part within the outer circle forms the blood and its vessels; the supplies out of which the other organs are to be produced, are afterwards derived from the yolk.

The membrane that forms the vesicle which is destined to contain the embryo when it has become a tadpole, has a power of enlargement as the embryo increases in size, and then performs the office both of the shell and of the membrane that lines it in the pullet's egg, at the same time serving as a defence to protect it, and allow of the blood being aerated.

The nigrum pigmentum lining the vesicle can only answer some secondary purpose, since it is not met with in the aquatic salamander, whose mode of breeding very closely resembles that of the frog. Upon reflecting that the frog's spawn is exposed to the scorching effect of the sun, and in places where there is no shelter, this nigrum pigmentum may be given to the eggs as a defence for the young during its growth, which cannot be required in those of the aquatic salamander, since they are separately inclosed within the twisted leaves of water plants, and screened from the full force of the sun's rays. The plant, the leaves of which the aquatic salamander most generally selects to lay its eggs upon, is the *polygonum persicaria.*

VI. PATHOLOGY (HUMAN).

M. Velpeau upon the Alterations of the Spinal Marrow.

From early cases collected with care, and conjoined with those which were entirely his own, M. Velpeau, in a memoir, has concluded, 1st, That the vertebral marrow may, in certain circumstances, be seriously affected, cut, interrupted, or destroyed, to a very considerable extent, without death ensuing, and without any function being manifestly changed; 2dly, That this proposition is contrary to what has been said until the present time, and to what we know of the uses of the nervous system.

M. Velpeau proposes, with circumspection, the following hypotheses, in order to reconcile the observations which he has recorded: 1st, All the parts of the nervous system, although dependent on each other, may to a certain degree exercise their functions independently of each other; 2dly, In the normal state, the central stem of the nerves is the place which unites all the sensitive and motive actions; but if the cord fails in any point whatever of its length, the nervous influence may be transmitted from the superior to the inferior parts, by means of lateral ramifications; 3d, In all the cases cited, the innervation would be itself affected, in the parts opposite those where the spinal marrow was deficient or diseased, owing to the nervous sinuses from which the spinal branches are produced anterior to the transverse apophysis; these issuing from the foramina of conjugation.

Contractions of the Alimentary Canal frequent in Mental Disorders.

Dr Müller, first physician of the Hospital Julius at Wurtzburg, in an appendix to an account of his medical practice in that hospital for twenty-six years, reports many cases of mental disorders observed by him, and adds, that, at the dissection, he almost constantly found a contraction in the alimentary canal, more especially in the colon, and most frequently serum in the ventricles of the brain.

On Mental Alienation. By M. NEUMANN. (Journal der Practischen Heilkunde, 1824.)

Of fifty insane patients, whom M. Neumann had an opportunity of examining after death, there were eight individuals, in whom neither the cerebrum, nor the other parts of the brain, shewed the slightest alteration of structure. One of these eight patients was affected by violent mania, alternated with fits of mild delirium; three were plunged into a deep melancholy; the fifth subject was a woman insane for a long time; the sixth was a man affected with phrensy for a great number of years, who grew melancholy with anxiety, and whose death was caused by ulcerations in the intestines; the seventh was an individual who had successively many distinct maniacal paroxysms, and who died of a serous effusion in the pericardium; the eighth had alternately attacks of apoplexy and of mania. The odontoid apophysis in this last was irregularly enlarged, and compressed the spinal cord.

In fifteen cases there were found serous effusions in the brain, under various forms. It has happened at times, but rarely, that all the ventricles of the brain were absolutely dry and empty.

The arachnoid membrane has been found thickened in eight cases; the individuals who died shewed symptoms of inflammatory fever, accompanied by delirium; death was preceded by a febrile state.

In one single case, the pia mater was harder than common. The skull shewed throughout various alterations, and in many other cases the consistence of the cerebral substance was altered. There were found also calculous concretions upon the greatest part of the surface of the hemispheres. In short, the following is a summary of the various species of alterations met with in the brain of each of the individuals who were the subject of these observations.

1st, There was observed in a female who sunk under a puerperal mania, nothing more than a considerable thickness of the arachnoid membrane.

2d, Of twelve subjects who had died in consequence of mania, three had the brain entirely healthy; in other three there was thickness of the arachnoid membrane, and exudation at the surface; in three others, hardness of the medullary substance; in one instance, there was also hardness of the pia mater; in another, united with this, there was obliquity of the brain; in the three last, there were simple hydropic phenomena. The skull was thickened but once in an old maniac.

3d, Of three individuals who died in a state of *dementia*, one had the brain entirely healthy; the second shewed calculous concretions in the lateral substance of the brain; the third a sanguineous coagulation in the corpora striata; the meninges had, at the same time, contracted adhesions among themselves.

4th, Of four epileptic patients deranged, and idiots, in one, the pituitary gland was cartilaginous; in the other, the left half of the brain was in a state of turgescence.

5th, Of four individuals who had been a long time affected with idiotism, one of them was epileptic; the skull of this last was thickened, and the falx of the brain ossified; in another case, the skull was also thickened, and the brain indurated; in the third case, obliquity of the brain and hydatids in this organ; in the fourth case, the skull and the brain had a very regular structure.

6th, Of seven melancholic patients, the brain in one was very hard; in two, the arachnoid membrane was thickened; in another, there was an ossification of the falx of the brain; in the three others, there was nothing irregular.

7th, Of six individuals become idiots after apoplexy, there was in one, caries of the petrous portion of the temporal bone, and serum in the brain; in three others, ascitic dropsy; in two others, hydatids; in one of the two last, there were hydatids in the corpora striata.

8th, Of fifteen other idiots, one exhibited a voluminous osteosteatomatous tumour at the base of the skull, which caused great destruction; in the second, the skull was thin, and there was dropsy of the brain; in all the others, the skull was more or less thick, the brain flabby and soft, with serous effusions more or less considerable.

COMPARATIVE PATHOLOGY.

Observations upon the Bite of the Viper upon Horses. By M. CHANEL, Veterinary Practitioner at Bourg.

On the 1st August 1817, as two breeding mares, each nourishing a she-colt, were lying upon the borders of a pond, they were bitten near, and in front of, the nipples. On the following day, the belly, in both, exhibited a swelling which extended from the ziphoide cartilage to the nipples. One of these animals was confided to my care. The tumour, of an edematous nature, felt very warm; it was more than an inch and a-half high on the right side. On this side, it extended to the nipple and to the internal aspect of the thigh. The mare had much fever; she had lost her appetite, and walked with difficulty. The wound made by the viper was very visible. The secretion of milk was suppressed. Scarifications upon the tumour gave issue to a reddish serum. Two setons were placed in the breast, and upon all the tumour ammoniacal frictions were made.

3d August. Augmentation of the abdominal tumour, which I circumscribed by a line of fire; deep cauterization in some points; ammoniacal frictions under the nipple and the thigh.

The 4th, 5th and 6th. The symptoms remained.

The 7th. A running of serum by the holes made in the skin. The same frictions.

The 8th. Diminution of the tumour, and of the swelling. The setons suppurate. The treatment was favoured by the internal use of tonics and bitters. Regular exercise was put in practice to excite sweating.

The 15th. The swelling had disappeared; but a very large tumour had formed itself in the place of the setons: it gave way to the employment of two purgatives, and the mare was completely cured by the 19th August.

It is useful to mention here, that the other mare was not subjected to any treatment. The lower part of the belly, the nipples, the seat of the bite, and the posterior extremities, were afflicted with enormous swelling, and the mare died the 5th August, almost without pain.

The autopsy shewed all the tumefied parts to be of a lardy consistence, containing much purulent serum, while the peritoneal membrane was enflamed with black points. The milk was coagulated in the left nipple, the nearest to the bite.

These two examples prove, that, in spite of the immense volume of our large animals compared with that of the viper, the latter can quickly put them to death, if means are not used capable of counteracting the effect of the venom. It is generally believed in this country, that it is the smell of the milk which allures the viper. I do not know how far this idea may be well founded; but almost the total number of the accidents of this kind that I have seen, have happened near the mammary organs; but perhaps this may proceed from the fineness of the skin in this place.

It follows from this and analogous facts, that animals are not absolutely to be compared to man, in a pathological point of view; that the experiments made upon animals, relative to the deleterious properties of certain substances that are proposed to be introduced into the materia medica, are not conclusive for man. If observation had not proved it, who would have believed that a quadruped, such as the horse, would be more sensible than man to the venom of the viper?

VII. CHEMISTRY.

On the existence of Iodine in the Waters of a Salt-pit of the province of Antioquia. By M. J. B. Boussingault. (From the Annales de Chimie et de Physique, vol. 30.)

A liquid of a yellow colour is brought from the province of Antioquia, which has a sharp taste, and a distinct odour of sea-water. It is employed in the treatment of goitre, and is called *aceyte de sal* (oil of salt) by the inhabitants, doubtless on account of its consistency. It is easy to discover that the aceyte de sal is a saturated solution of the muriates of soda, lime, and magnesia; but, as iodine is the only specific against goitre yet known, I thought that it might also be present, and I have proved it by the following experiments.

On treating the aceyte de sal by sulphuric acid in a retort, a copious disengagement of muriatic acid vapours took place; and on heating the retort, it became full of the violet vapour peculiar to iodine.

The solution of starch did not at first occasion any change in the aceyte de sal; but, on adding a few drops of sulphuric acid, a deep blue colour made its appearance. The necessity of adding sulphuric acid indicates that iodine is not in a free state, but probably in that of hydriodic acid, forming a hydriodate. The presence of iodine in the aceyte de sal is so much the more remarkable, as that substance is nothing but the mother-water from the salt-pit of Guaca, situated in the cordillera which separates the Rio-Magdalena from the Rio-Cauca, and at a very great distance from the coast. The salt is obtained by evaporating the salt-water almost to dryness. As thus procured, it has a sharp and very disagreeable taste, and is impregnated with on oily-looking liquid, which is removed by placing the salt in an inverted hollow cone of baked earth, having a hole in its apex. The mother-water drains through, and drops into vessels placed below to collect it. This operation is very analogous to the claying of sugar.

The salt, when well drained, is sold in commerce, and consumed in the country. I have satisfied myself that it contains a quantity of iodine which is barely appreciable, and yet one cannot doubt its efficacy in goitre: for, in the country adjacent to the salt-pit, and where the salt is consumed, the goitre is unknown; while, at a distance, in the same cordillera, this disease is every where observed.

On the presence of Iodine in the water of the Mediterranean. By M. Balard. (From the Annales de Chimie et de Physique, vol. xxviii.)

Soon after the discovery of iodine, MM. Gaultier de Claubry and Colin proposed starch as the most delicate test of its presence. It was indeed only requisite to pour an aqueous solution of that vegetable substance into a liquid containing iodine, and a beautiful blue made its appearance, owing to the formation of an ioduret of starch.

The delicacy of this test could not be denied, but its indications cannot always be trusted. Most substances which can furnish hydrogen to iodine, either from themselves directly, or through the medium of water, convert iodine into hydriodic acid, and thus cause the blue colour, peculiar to some of the compounds of iodine and starch, to disappear. Sulphurous acid and sulphuretted hydrogen,—the almost constant products of the incineration of organized bodies, which contain earthy or alkaline sulphates, are very apt to produce this effect.

Several means might be employed for avoiding this inconvenience; but that which I propose appears both easy of execution, and uniform in its results. I have been some time in the habit of using chlorine in the analysis of some productions of the Mediterranean; but, as the addition of this body in slight excess has as much influence as sulphuretted hydrogen in destroying the blue colour, which it is so important to produce, it is necessary to proceed in the following way.

After having mixed the liquid that contains iodine with starch and sulphuric acid, a small quantity of the aqueous solution of chlorine is gently added, which, from its inferior density, swims upon the surface of the former, without mixing with it. At the point where the two solutions meet, a blue zone appears, easily distinguishable, however slight it may be, by the contrast it forms with the fluid around it. If the vessel is slightly moved, so as to mix the two liquids partially with one another, the blue colour is developed at the point of contact of the chlorine with the lower solution; but if they are intimately mixed, the blue disappears on the instant, provided the chlorine is in excess.

It is by means of this reagent so modified, that I have been able to ascertain the existence of iodine in bodies where it has been hitherto looked for in vain; for example, in several marine mollusca, as well naked as testaceous, such as the doris, the venus, and oysters, &c.; several polypi and marine plants, the gorgonia, the zostera marina, &c.; and also in the mother-water of the salt-pits fed by the Mediterranean.

The very small quantity of iodine which is found in sea-water has not permitted me to determine in what state it exists there; but the nature of the re-agents employed to prove its presence, renders it probable that it is in the form of a hydriodate.

I can recommend this process to chemists with confidence, convinced that it will spare many fruitless attempts to those who may search for iodine in substances which contain it in very small proportions.

Experiments concerning the Substances which pass into the Urine. By Dr Wöhler.—(From the Heidelberg Zeitschrift der Physiologie.)

The author of this interesting essay, of which we propose to give an abridged translation, obtained the prize offered by the Medical Faculty of Heidelberg, in answer to the following question, "What substances, introduced by the mouth, or in any other way, into the body of man or animals, pass into the urine; and what inferences may be thence deduced?" Dr Wöhler, accordingly, has divided his essay into two parts; the first containing experiments and observations, and the second his conclusions from them.

Part First.—On the Substances which pass into the Urine.

I. *Inorganic Substances.*

Iodine.—I long ago discovered the presence of iodine in the urine of a young dog, to whom several grains of that substance, dissolved in alcohol, were given daily. It was obviously present in the urine under the form of hydriodic acid; for the addition of starch gave no appearance of blue till some substance was added which could deprive the iodine of its hydrogen. Chlorine is not to be recommended for this purpose; since a small excess of it converts iodine, which is set free, into iodic acid,—a compound that does not act on starch. I always detected it most easily by putting a little chlorate of potash, with starch, into the urine, and then carefully bringing a drop of sulphuric or muriatic acid in contact with them. The starch began to turn violet often in the course of a few minutes.

To a bitch which had puppies, I gave some bread containing four grains of iodine dissolved in alcohol. In five hours one of the puppies died, and iodine was discovered both in the contents of the stomach, and in the urine. This experiment shews the passage of iodine into the milk, as well as into the urine *.

Tiedemann and Gmelin lately found iodine in the urine of a horse, which had been drenched with a solution containing an ounce of hydriodate of potash, and some free iodine.

Alkaline Carbonates.—As the alkalies are the chief remedy against a morbid production and deposition of uric acid, frequent opportunities have been obtained of making observations on their passage into the urine. Mascagni, who took a drachm of the carbonate of potash daily, in consequence of a calculous complaint, observed that his urine soon became alkaline. Brande declares that he observed an alkaline reaction in the urine six minutes after two drachms of the carbonate of soda were taken with warm tea. Bostock found the urine alkaline, and capable of effervescing with acids, in a patient who took two ounces and a half of the carbonate of soda daily. The continued use of alkalies has even been known to induce such a strong alkaline condition of the urine, as to enable it to dissolve uric acid †.

Hydrosulphuret of Potash.—It was observed by Garnet, that paper, moistened with a solution of the acetate of lead, was blackened by the urine of a person who had taken the sulphuret of potash.

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* We have authority to state, that Dr Turner detected the presence of iodine in the urine of three patients who were under Dr Graham's care in the clinical wards of the Royal Infirmary, last winter. The iodine was taken in the form of tincture, to the extent of about ten grains daily. None of it passed into the urine uncombined, but existed as the hydriodate of potash or soda, which was obtained by evaporating the urine to dryness, and digesting the residue in alcohol. The iodine was detected by adding first a solution of starch, and then concentrated sulphuric acid, to the urine, when an intense blue colour appeared. Previous concentration was not necessary. One patient was passing 22 pounds daily, and yet certain indications of the presence of iodine were perceived without concentrating it by evaporation. One of these patients was bled, and the blood carefully examined for iodine, but no trace of it could be detected.—Ed.

† From the general fact being so well established, Dr Wohler considered it superfluous to make any experiments concerning it.

A drench, containing a pound of the sulphuret of potash, was given to a horse, which was killed four hours after. The urine had a strong alkaline reaction, but did not smell of sulphuretted hydrogen. The addition of muriatic acid caused a very large quantity of carbonic acid to be disengaged, without any odour of sulphuretted hydrogen being perceptible; but when paper, moistened with acetate of lead, was placed over the mouth of the vessel, it became quite black in the course of a few hours.

On pouring a solution of muriate of baryta into the urine already acidulated by muriatic acid, a copious precipitate subsided, which, when dried and heated in a glass tube, yielded a sublimate of very pure sulphur. This sulphur proceeded from the decomposition of the sulphuret of potash by muriatic acid being thrown down as lac sulphuris. The residue left, after the sublimation of the sulphur, was pure sulphate of baryta.

This experiment proves, that some of the hydrosulphuret of potash reached the urine without decomposition; but that the greatest part was converted into sulphate of potash. Sulphuretted hydrogen was disengaged from the urine of a dog, which had taken a drachm of the flowers of sulphur, on the addition of muriatic acid. The sulphates were also found in unusual quantity.

Chlorate of Potash.—A young dog swallowed a drachm of the chlorate of potash. Four hours after, in which interval he passed urine four times, he was killed. The bladder contained half an ounce of a pale coloured urine. On adding sulphuric acid, the urine became of a dark yellow colour, emitting the odour of the oxide of chlorine, precisely as happens when that acid is poured into a solution of chlorate of potash. On evaporating the urine to nearly one half its bulk, a quantity of crystallized chlorate of potash separated on cooling, similar to what would have been deposited from a saturated solution of that salt in an equal quantity of water. It possessed all the properties of chlorate of potash.

The salt was also detected in an ounce and a half of the urine which had been voided before death.

This salt has no greater action than nitre. No trace of inflammation was visible in the stomach. Like all salts of this kind, it seemed to promote the secretion of urine, and occasioned diarrhea.

Saltpetre.—Every physician knows that he must abstain from giving nitre in an inflammatory state of the urinary passages, and the reason assigned, is the irritation produced by the presence of that salt in the urine. Rollo inferred its presence from the production of bitartrate of potash when tartaric acid was added to the urine; and Darwin found that paper, moistened with urine which was supposed to contain nitre and then dried, burned in the same manner as if it had been soaked in a solution of saltpetre in water.

An old but healthy horse was drenched with a solution of five ounces of saltpetre, and was killed in four hours after. The bladder was filled with urine. A part of it was evaporated to the consistence of syrup, and then boiled with alcohol. The solution yielded brown coloured crystals on cooling, which deflagrated when thrown on red-hot charcoal, and tasted like saltpetre. Paper soaked in the urine and dried, did not burn in the way mentioned by Darwin.

Sulphocyanate of Potash [*].—Vogel and the younger Sœmmering gave a drachm of the sulphocyanate of potash to a dog. The animal died in 24 hours, and the presence of the salt in the urine was proved by adding a salt of the peroxide of iron, which produced a deep red colour. Tiedemann and Gmelin also detected it in the urine of a dog.

Borax.—Tiedemann and Gmelin drenched a horse with a pound of borax in solution. The animal was killed in three hours after, and boracic acid was detected in the urine by the usual test.

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[*] The passage of the ferrocyanate of potash into the urine is so well known a fact, that we omit Dr Wohler's remarks respecting it.

Muriate of Baryta.—Tiedemann and Gmelin detected the muriate of baryta in the urine of a horse, which had taken five ounces of the salt four hours previously. The urine did not contain so much of it as the serum of the vena portæ and mesenteric veins. Morichini also found it in the urine of a person who took two drachms daily.

All my experiments with dogs failed in consequence of the muriate of baryta being uniformly rejected by vomit.

Tartrate of Nickel and Potash.—I obtained this compound by boiling the oxide of nickel in a solution of the bitartrate of potash. A green solution formed, which, when evaporated, dried into a green mass like gum, and of a sweet taste. Half a drachm of it was given to a small dog, and the urine, voided four hours after, was mixed with the hydrosulphuret of ammonia. A brown colour immediately appeared, and dark brown flocculi afterwards subsided, the colour of which must have been owing to the sulphuret of nickel.

Silica.—Berzelius first found silica in the urine, and ascribed its origin to the water which we drink. To determine the possibility of its passage into the urine, I drenched the same horse which had taken the saltpetre, with five ounces of the silicate of potash dissolved in water, both solutions being given at the same time. He was killed in four hours after. The stomach was strongly inflamed, and contained nearly all the fluid which it had swallowed, obviously because its action was disturbed by the inflammation.

The urine was strongly alkaline, and yielded, with tartaric acid, a copious precipitate of the bitartrate of potash, indicative of the presence of a large quantity of that alkali. A portion of silica was also discovered.

II. *Organic Compounds.*

Oxalic Acid.—Two drachms of powdered oxalic acid, mixed with flesh and bread, were given to a middle sized dog, while fasting. No vomiting occurred, nor did he appear to suffer any inconvenience. He was killed eight hours after he had taken the acid. The urine found in the bladder did not appear unusually acid; but it deposited, on cooling, a considerable quantity of a white powder, consisting wholly of small crystals precisely similar in appearance to the phosphate of ammonia and magnesia. On mixing the clear urine, after the crystals had subsided, with nitrate of lime, a second powder, of the same character as the first, was deposited, and both of them proved, on examination, to be pure oxalate of lime.

This urine was also remarkable for containing a large quantity of albumen; for it became cloudy when heated, or on the addition of nitric acid; and the flocculi, which separated, had all the characters of coagulated albumen.

Tartaric acid.—A dog took two drachms of tartaric acid, mixed with flesh and bread, and was killed four hours after. The bladder contained about four ounces of urine, which deposited a considerable quantity of small white crystals, exactly like the oxalate of lime in the preceding experiment. An additional quantity of a similar precipitate was obtained by adding some nitrate of lime, the whole of which exceeded half a drachm.

The crystals proved, on examination, to be tartrate of lime. This urine contained no albumen.

Citric and Malic Acids.—Morichini found the citric and malic acids in such quantity in the urine, after drinking lemonade freely, that it appeared to him to be a mere solution of those acids. But the usual constituents of the urine must certainly have been present at the same time. The urine of the dogs, to whom oxalic and tartaric acids were given, appeared to be natural with respect to its smell, taste, and proportion of the phosphate of lime, though it contained a large quantity of those acids. The free use of the fruit of the solanum lycopersicum, according to Morichini, occasions the introduction of citric, malic, and oxalic acids into the urine.

Gallic Acid.—A drachm of gallic acid, prepared according to Scheele's method, was given to a middle sized dog among his food. In five hours, after he had rejected about a third part of what he had swallowed, he was killed. The urine, of which the bladder contained very little, was so rich in gallic acid, that a single drop instantly gave a bluish black colour to a salt of iron. The alkalies caused the same changes as they usually produce in a solution of gallic acid.

Reil observed, that a calculous patient, who was taking soda, soap, uva ursi, and kina, passed his urine clearer than before, but that its colour changed to dark violet, on standing in the air. The colour manifestly arose from the gallic acid of the uva ursi, acted on by the alkali while freely exposed to the atmosphere.

Emmert noticed that, after the free application of the skin to a decoction of the spurious Angustura bark, the urine acquired the property of striking a dark colour with solutions of iron, which most probably arose from the presence of gallic acid.

The urine is said to be of a dark colour, when rhubarb and preparations of iron are employed at the same time. The gallic acid must doubtless also be the cause of it, which, in the rheum palmatum at least, according to Brande, is contained in considerable quantity.

Succinic Acid.—A small dog swallowed half a drachm of succinic acid, and was killed five hours after. The bladder contained but a small quantity of urine, which was turbid, had no acid reaction, but was so alkaline, that though fresh, it effervesced strongly with acids. On mixing it with the permuriate of iron, a copious light brown precipitate formed, which proved to be succinate of iron.

Benzoic Acid.—This acid is known to occur in the urine of the horse, cow, camel, and other herbivorous quadrupeds; but it is not known whether it is a product of digestion, or whether it is introduced into the bodies of these animals along with the food. Vogel observes, in favour of the first opinion, that he found benzoic acid in the urine of the rhinoceros, but not in that of the elephant, though they were both fed with the same substances. The presence of that acid in the urine of infants is in support of the same idea. The second opinion is supported by the discovery of benzoic acid in the flowers of the melilotus officinalis, a plant which is very frequently eaten by herbivorous animals; and there is no doubt that this is not the only meadow plant that contains benzoic acid.

Though the benzoic acid may be generated in the bodies of infants and certain animals, the following experiment will prove that, when taken into the body, it finds its way unchanged, and in large quantity, into the urine. Half a drachm of benzoic acid was given to a small dog, and in five hours after he voided urine. On adding nitric acid to a part of it, small crystals gradually separated, which had all the properties of benzoic acid. This acid was not free in the urine, but was in combination with some alkali; for no separation of the crystals took place, when the urine was concentrated by evaporation, till nitric acid was added.

Salts of the Vegetable Acids.—Marcet is of opinion that vegetable acids are decomposed during the process of assimilation. We have seen that this is not the case; that, on the contrary, free vegetable acids pass without decomposition into the urine. But he says farther: "Sir Gilbert Blane has proved, that the citric acid of the common saline draughts does not prevent the potash from depriving the urine of its acidity;" and that Blane hence inferred, that the citric acid was decomposed. Being unable to find the passage referred to, I resolved to determine the point by direct experiment.

A drachm of the crystallized neutral acetate of soda was given to the small dog, employed in some of the former experiments. The urine, voided four hours after, was turbid, had an alkaline reaction, and effervesced with acids. The urine voided the following hour had the usual acidity.

As the urine of dogs is often alkaline, I drank a solution of a drachm of acetate of soda in water. The urine, passed in an hour after taking the draught, had its usual acid reaction; but in two hours afterwards, it was distinctly alkaline, and effervesced with acids. In an hour after, it had recovered its usual acidity.

This experiment has been frequently repeated, and with larger quantities of the salt, both by myself and many of my acquaintances, with the same result. A similar effect was produced by several salts of tartaric acid; and it is probable that this conversion into alkaline carbonates, is common to all the salts of the vegetable acids. I have often remarked, that the urine of persons, who had taken acetate of potash for some time, became alkaline, and that their urine was turbid from a deposition of the earthy phosphates *.

On the Nature of Picrotoxine and Menispermic Acid.

In an analysis to which M. Boullay subjected the berries of the menispermum cocculus, that chemist succeeded in separating a peculiar crystallizable principle, which, from its bitter, poisonous qualities, he called Picrotoxine, and regarded it as a vegetable alkali, similar to morphia and kina. He at the same time detected the presence of what he conceived to be a new acid, to which he gave the name of Menispermic Acid. As some doubt remained as to the accuracy of this analysis, M. Casaseca has made an examination of the berries, and arrived at the following conclusions.

1. That the menispermic acid does not exist.

2. That the properties attributed to the menispermic acid, and which led M. Boullay to regard it as a new vegetable acid, are owing to a mixture of sulphuric acid and organic matter.

3. That the picrotoxine does not possess alkaline properties, and, therefore, ought not to be regarded as a vegetable acid, but as a peculiar bitter principle.

M. Boullay, in reply, confesses, on the authority of Vauquelin, that his menispermic acid is a mixture of sulphuric and malic acids, coloured by vegetable matter. He also admits that picrotoxine has no alkaline reaction, and cannot neutralize an acid. M. Casaseca is therefore quite justified. The picrotoxine can, however, combine with acids, and forms crystallizable compounds with the acetic and nitric acids.—*Journal de Pharmacie for Feb.* 1826.

Prize Questions of the Parisian Society of Pharmacy for 1826.

1. To determine the essential phenomena which accompany the transformation of organic substances into acetic acid during the act of fermentation.

2. Is the formation of acetic acid always preceded by the production of alcohol, in the same manner as the production of sugar precedes that of alcohol in the vinous fermentation?

3d, What are the substances which may serve as a ferment for the acetous fermentation, and what are the essential characters of these kinds of ferments?

4th, What influence does the air exert over the acetous fermentation? Is its presence essential? In which case, how does it act? Is its office the same as in the alcoholic; or, if absorbed, does it become a constituent part of the acid, or give rise to foreign products?

5th, Finally, To establish a theory of the acetous fermentation in harmony with all the facts observed.

The Society will give a medal, worth 1000 francs, to the author who shall solve all the proposed questions completely; or, if not entirely solved, the Society will grant a medal, worth 500 francs, to the person who treats the greatest number of questions in a satisfactory manner.

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* The second part of this essay has not yet reached us. Should it contain any thing of interest, we shall not fail to insert it in a subsequent number.

The memoirs to be written in French or Latin, and to be delivered to M. Henry, Secretary of the Society, before the 1st of April 1827. A motto is to be attached to the paper, corresponding to that on a sealed packet, containing the name of the author. Foreigners are invited to contend for the prize.—*Journal de Pharmacie, Feb.* 1826.

Notice concerning a New Species of Biliary Calculus found in Animals. By M. Lassaigne.

Poulletier de la Salle first observed, that the calculi found in the gall-bladder of the human subject often contained a white crystalline pearly substance, which was afterwards described by Fourcroy, in his Système des Connaissances Chemiques, under the name of Adipocire, because he believed it to partake of the properties both of fat and wax.

M. Chevreul, in his extensive researches on fat, subjected it to a new examination; and, having observed that it differed essentially from that class of bodies, separated it from the place assigned to it by Fourcroy, and gave it the name of Cholesterine, as indicative of its origin.

The existence of this principle, since classed among the proximate animal principles, has been confirmed by the discovery of it both in man and animals, in certain morbid productions, the formation of which was independent of the bile, and the organ which secretes it. This circumstance induced many to believe that cholesterine, which had not, at that time, been discovered in healthy human bile, was the result of a morbid condition of that liquid, originating there, as in other tissues remote from the liver, and which had no connection with it. But, since the recent experiments of M. Chevreul have demonstrated its presence in the bile of healthy persons, who had died suddenly, or from a disease of very short duration, we must entertain another opinion on this subject. The formation of these biliary concretions is, therefore, now explained just as naturally as the greater part of the calculi which are found in the urinary bladder.

The same chemist, in extending his researches to the bile of other animals, likewise detected cholesterine in that of the bear and pig; and though that principle had been found hitherto in no biliary calculi except those from the human subject, we should now expect to meet with it in the concretions of those animals in whose bile it has been observed to exist. The chemical examination of a biliary calculus taken from the body of a sow, killed at the school of Alfort, for anatomical purposes, tends to realise this conjecture.

It follows, from an examination of this calculus, that it is composed of,

1. Cholesterine,	6.
2. White resin,	44.95
3. Bile,	3.6
4. Animal matter, and green resin modified,	45.45
	100.00

The biliary calculi of the ox, cow, and horse, which have been hitherto examined, contain nothing but the yellow colouring matter, peculiar to the bile of those animals; that which forms the subject of the preceding analysis is very remarkable in its composition, and constitutes a new species; of which, other examples will probably be discovered hereafter.—*Annales de Chimie,* vol. xxxi.

VIII. PHARMACY.

On a New Preparation of Croton Tiglium. By the late John Pope, Esq.—P. 96–102.

With the exception of the new editions of the rival Dispensatories, the London and the Edinburgh, which are both creditable to the industry of their respective authors, no separate work on materia medica has lately appeared in this country. Many valuable essays on distinct parts of this subject, however, have occasionally appeared in the transactions of various learned societies, and the periodical journals; and the papers of this description are from the Medico-Chirurgical Transactions, which we are now to introduce to the attention of our readers.

Some years since, the expressed oil of croton *tiglium*, which had been so long disused, as to be almost unknown to British practitioners, was again introduced into Europe as a medicine, and with such beneficial results, "as to obtain for it a place in the materia medica of the London College of Physicians." Being a medicine of great power, and operating in very minute doses, it became a subject of considerable importance to ascertain in which part of the seeds the acrimony, on which its efficacy depends, resides. Mr Pope, who undertook this examination, mentions, on the authority of a medical friend, who had long resided in India, that the cotyledons or medulla, as he terms them, mixed with a native preparation of antimony, and formed into pills, are the parts of the seed used by the natives of India; who are of opinion, that the testa, epidermis, and rudiments of the seminal leaves, are too active for medicinal use, these being the parts in which the acrid principle is chiefly seated. On this information, Mr Pope first prepared an expressed oil from the cotyledons, one or two drops of which were sufficient for a dose; and this oil closely resembles that brought from India. He found that the best mode of exhibiting this oil is by dissolving it in alcohol, "in the proportion of one drop to a drachm; the suggestion of which, however, is due to Dr Nimmo of Glasgow, of whose experiments Mr Pope seems not to have been aware. The following is the form for the preparation of the tincture recommended by Mr Pope.

"Take of the

Seeds of croton tiglium, carefully deprived of the bark and epidermis, and bruised, two ounces.

Alcohol (sp. grav. 836.), twelve ounces.

Digest for six days, and strain. The dose of the filtered tincture is about twenty minims."

"Five or six grains of the kernels given to a dog, produced abundant watery evacuations in one or two hours, and oftener in a much shorter time." When the oil was given to dogs in doses sufficient to produce its purgative effects, and the animals then killed, "no traces of inflammation presented themselves."

Mr Pope next examined the epidermis of the seeds. It is scarcely acted on by alcohol or ether; but yields its acrimony readily to oil of turpentine, and oil of olives, "especially if assisted by heat." This solution is extremely acrid, producing a sensation of burning on the tongue, accompanied, when given to the lower animals, with nausea, vomiting, and heat, and itching of the rectum, and raising a pustular eruption when it is rubbed on the skin. The dust, in weighing the seeds, excited "violent irritation of the mucous membrane of the nose." The epidermis, when exhibited alone, was uniformly rejected from the stomach of those animals to which it was given by Mr Pope.

Croton oil is certainly a remedy of great power; and in rejoicing that it has again come into use, we trust that no improper application of it will a second time expel it from the materia medica of the British Isles. As a subject of rational curiosity, we will be glad to see its acrid principle separated and determined; but, in a medicinal point of view, the facility of exhibiting the oil, and regulating the dose, in the alcoholic mixture, leaves the discovery of that principle a matter of indifference.

IX. BOTANY.

NOTICES of BOTANICAL WORKS.

CURTIS'S BOTANICAL MAGAZINE.

No. 471.—T. 2643, *Caladium grandifolium*, Willd. Nat. of Caraccas and Guiana.—T. 2644, *Commelina deficiens*, Herb. Rio Janiero.—T. 2645, *Ipomœa bignonioides*, Sims. Cayenne.—T. 2646, *Coronilla ibirica*, Bieb. Constantinople.—T. 2647, *Cineraria discolor*, Sw. Jamaica.—T. 2648, *Pæonia sessiliflora*, Sims. Native country unknown.

No. 472.—T. 2649, *Campanula speciosa*, Hornem. Siberia.—T. 2650, *Piqueria trinervia*, Kunth. Mexico.—T. 2651, *Acacia quadrangularis*, Link. Native country unknown.—T. 2652, *Xylophylla montana*, Sw. Jamaica.—T. 2653, *Campanula Ruthenica*, Bieb. Tauria.—T. 2654, *Aconitum Anthora*, Jacq. The Alps.—T. 2655, *Crocus lagenæflorus α*, Salisb. Communicated from the Horticultural Society's Garden.—T. 2656, *Cleome Candelabrum*, Sims. Native country not mentioned.

No. 473.—T. 2657, *Pitcairnia furfuracea*, Willd. South America.—T. 2658, *Laurus Camphora*, L. Japan.—T. 2659, *Astranthus cochinchinensis*, Lour. Cochinchina.—T. 2660, *Andromeda buxifolia*, Sm. Mauritius.—T. 2661, *Grevillea linearis*, Br. var. *incarnata*. New Holland.—T. 2662, *Yucca glauca*, Sims. Carolina.

BOTANICAL REGISTER.

No. 132.—T. 949, *Moræa Herberti*, Lindl. South America.—T. 950, *Heteropteris nitida β*, Kunth. Brazil.—T. 951, *Hoya pallida*, Lindl.—T. 952, *Halesia parviflora*, Mich. North America.—T. 953, *Cattleya Forbesii*, Lind. Rio Janeiro.—T. 954, *Brunsvigia minor*, Lindl. Cape of Good Hope.—T. 955, *Ruellia persicifolia*, Lindl. East Indies.

No. 133.—T. 956, *Dracæna stricta*, Sims.—T. 957, *Indigofera incana*, Thunb. Cape of Good Hope.—T. 958, *Massonia grandiflora*, Lindl. Cape of Good Hope.—T. 959, *Podolobium staurophyllum*, De Cand. New Holland.—T. 960, *Cleome rosea*, Vahl. Rio Janeiro.—T. 961, *Calathea violacea*, Lindl. Rio Janeiro.—T. 962, *Dumasea pubescens*, De Cand. Nepal.

No. 134.—T. 963, *Tribrachia pendula*, Lindl. Sierra Leone.—T. 964, *Isotoma axillaris*, Lindl. New Holland.—T. 965, *Bignonia pallida*, Lindl. West Indies.—T. 966, *Catasetum cristatum*, Lindl. Bahia de St Salvador.—T. 967, *Desmodium dubium*, Lindl. Nepal.—T. 968, *Psoralea pubescens*, Willd. Lima. T. 969, *Solanum Seaforthianum*, Dunal. West Indies.

HOOKER'S EXOTIC FLORA.

Part 33.—T. 205, *Tillandsia aloifolia*, Hook. Trinidad.—T. 206, *Caladium pedatum*, Hook. Brazil.—T. 207, *Epidendrum ellipticum*, Graham. Rio Janeiro.—T. 208, *Asplenium flabelliforme*, Cav. New Holland.

Part 34.—T. 209, *Eucrosia bicolor*, Bot. Reg. Chili.—T. 210, *Pothos coriacea*, Graham. Rio Janeiro.—T. 211, *Pothos Harrisii*, Graham. Rio Janeiro.—T. 212, *Justicia calytricha*, Otto.

GREVILLE'S SCOTTISH CRYPTOGAMIC FLORA.

No. 46.—T. 226, *Polyporus abietinus*, Fries.—T. 227, *Stictis radiata*, Pers.—T. 228, *Himantia candida*, Pers.—T. 229, *Polyporus betulinus*, Fries.—T. 230, *Chætomium elatum*, Kunze. New to Great Britain.

No. 47.—T. 231, *Protococcus nivalis*, Ag. This is the *Red Snow* about which so great interest has been excited among botanists. Dr Greville has given a correct figure, exhibiting the plant in every stage; and, in the letter-press, besides giving a history of this extraordinary *Alga*, he has added a translation of the detailed memoir of Professor Agardh on the same subject. The native specimens examined by Dr Greville were communicated by Captain Carmichael, who discovered them in the Island of Lismore.—T. 232, *Agyrium rufum*, Fries.—T. 233, *Hysterium varium*, Fries.—T. 234, *Thelephora Padi*, Pers. All new to Great Britain.—T. 235, *Agaricus variabilis*, Pers.

No. 48.—T. 236, *Chætopsis Wauchii*, Grev. A new and most remarkable genus.—T. 237, *Xylaria polymorpha*, Grev.—T. 238, *Dædalea quercina*, Pers.—T. 239, *Cryptosphæria acuta*, Grev. and *C. doliolum*, Grev.—T. 240, *Halymenia purpurascens*, var. *crispata*. A very curious variety.

We observe that Dr Greville has already illustrated no fewer than 112 genera in this work; and we are glad to find that the pressure of the times has proved no obstacle to its sale.

MEMOIRS of the WERNERIAN NATURAL HISTORY SOCIETY. Vol. IV. Part II.

There is an article in this volume by Dr Greville on the Esculent Fungi of Great Britain; and we are induced to notice it, although it has been published nearly two years, on account of some curious facts related by the author concerning the effects of certain species of Fungi upon the human system.

It may be observed, that the true Fungi are at present put to few uses, if we except those of a culinary nature. But it is extremely probable they will hereafter be applied to many medicinal and economical purposes. Many species which are rejected as poisonous from their highly acrid properties, may, from the presence of so active a principle, be introduced with advantage into the Materia Medica, when experiment shall have ascertained their exact nature. The Russians have long employed in dyeing, those Boleti which change to a blue colour on being cut; and the Kamtschatdales are in the daily habit of intoxicating themselves with the fly agaric (*Amanita Muscaria*). It is the curious effects of this fungus, when taken into the stomach, that we proceed to give in Dr Greville's own words.

" As the plant commonly known by the name of the *fly fungus* (from its property of destroying flies when steeped in milk) has made some noise of late on the Continent, I must warn those who might feel inclined to try it in this country of the danger they would expose themselves to. It has not been clearly ascertained whether the species which grows in this country, and in the south of Europe, be indeed the same as that which is found in Kamtschatka, and called *Amanita Muscaria Kamtschatica*. At any rate, our plant is known to be highly poisonous; and the Kamtschatka variety may be another species, or have partly lost its virulence from inhabiting a more northern climate. The properties of this variety are exceedingly curious, and as they are described in a German essay by Dr Langsdorf, in *Annalen der Wetteranischen Gesellschaft für die gesamente Naturkunde*, I trust a concise account of them will not be unacceptable.

" This variety of *Amanita Muscaria* is used by the inhabitants of the north-eastern parts of Asia, in the same manner as wine, brandy, arrack, opium, &c. is by other nations.

" These fungi are found most plentifully about Wischna Kamptschatka and Milkowa Derewna, and are very abundant in some seasons, and scarce in others. They are collected in the hottest months, and hung up by a string in the air to dry: some dry of themselves on the ground, and are said to be far more narcotic than those artificially preserved. Small deep-coloured specimens, thickly covered with warts, are also said to be more powerful than those of a larger size and paler colour.

" The usual mode of taking the fungus is to roll it up like a bolus, and swallow it without chewing, which the Kamtschatdales say would disorder the stomach. It is sometimes eaten fresh in soup and sauces, and then loses much of its intoxicating property: when steeped in the juice of the berries of *Vaccinium uliginosum*, its effects are those of strong wine.

"One large or two small fungi is a common dose to produce a pleasant intoxication for a whole day, particularly if water be drunk after it, which augments the narcotic principle.

"The desired effect comes on from one to two hours after taking the fungus. Giddiness and drunkenness result from the fungus, in the same manner as from wine or spirits; cheerful emotions of the mind are first produced; the countenance becomes flushed; involuntary words and actions follow, and sometimes at last an entire loss of consciousness. It renders some remarkably active, and proves highly stimulant to muscular exertion: with two large a dose, violent spasmodic effects are produced.

"So very exciting to the nervous system, in many individuals, is this fungus, that the effects are often very ludicrous. If a person under its influence wishes to step over a straw or a stick, he takes a stride or a jump sufficient to clear the trunk of a tree; a talkative person cannot keep silence or secrets; and one fond of music is perpetually singing.

"The most singular effect of the *Amanita* is the influence it possesses over the urine. It is said that, from time immemorial, the inhabitants have known that the fungus imparts an intoxicating quality to that secretion, which continues for a considerable time after taking it. For instance, a man moderately intoxicated to-day, will, by the next morning, have slept himself sober; but (as is the custom) by taking a tea-cupful of his urine, be more powerfully intoxicated than he was the preceding day by the fungus. It is therefore not uncommon for confirmed drunkards to preserve their urine as a precious liquor, against a scarcity of the fungus. This intoxicating property of the urine is capable of being propagated; for every one who partakes of it has his urine similarly affected. Thus, with a very few *Amanitæ*, a party of drunkards may keep up their debauch for a week. Dr Langsdorf mentions, that, by means of the second person taking the urine of the first, the third that of the second, and so on, the intoxication may be propagated through five individuals."

The Genus STACHYTARPHETA not distinct from that of VERBENA.

M. Auguste St Hilaire has discovered in Brazil a plant partaking equally the characters of the genera *Verbena* and *Stachytarpheta*. It has the four fertile stamens of *Verbena*, yet the bilocular capsule of *Stachytarpheta*. The spike also is neither carnose nor pitted. In other less important points, it may also be referred to either genus. M. A. St Hilaire justly concludes, that the separation of those species of *Verbena*, which have gone to form the genus *Stachytarpheta*, cannot any longer be admitted.—*Bull. des Sciences, Soc. Philom.*

On the FLORA of the FALKLAND ISLANDS (*les Isles Malouines* of the French); by M. GAUDICHAUD.

Until the present time, nothing but a few detached fragments were known regarding the Flora of the Falkland Islands. M. Gaudichaud has passed two months in them, and examined their vegetation with that zeal which has rendered him one of the martyrs of science.

The surface of the soil of these islands is composed of a spongy turf. This soil, which resists the efforts of cultivation, produces in abundance those plants which delight in such a situation; but if the vegetation of this country be rich in individuals, it is, on the other hand, poor in species. In the whole Archipelago of the Falkland Islands, there does not exist a single tree, and the largest shrub (the *Veronica decussata*) scarcely reaches the height of six feet. Almost all the plants seem to be upon a level, so rare are the species which exceed it.

The prevailing families are *Lichens*, the *Ferns*, the *Mosses*, the *Cyperaceæ*, the *Gramineæ*, the *Compositæ*, and the *Ranunculaceæ*. M. Gaudichaud found no *Labiatæ*, *Boragineæ*, *Leguminosæ*, &c.

Seven *Gramineæ*, three *Cyperaceæ*, and four *Junceæ*, are produced in such profusion, and form tufts so contiguous, that they seem to be sole mistresses of the soil,—the other plants being almost inconspicuous. In separating the tufts, a prodigious number of *Lichens*, *Mosses*, *Marchantiæ*, and of phenogamous plants, with weak and straggling stems, are discovered.

We must not, however, conclude, that the vegetable kingdom absolutely offers no resource to the mariner thrown upon these coasts during the season of vegetation. The *Myrtus nummularia*, the *Pernettia empetrifolia*, the *Empetrum rubrum*, the *Rubus geoides*, bear fruits of a very agreeable flavour. The *Oxalis enneaphylla*, the *Rumex acetosa*, *R. acetosella* and *patientia*, and a species of *Apium*, are alimentary. In cases of necessity, the *Cenomyce rangiferina* and many other *Lichens* would not be despised; even the base of the stalk of the *Festuca flabellata* has the grateful taste of the palm-cabbage.

M. Gaudichaud collected in the Falkland Islands 128 species, belonging to 40 families. From 42 to 46 of these are new. 28 or 29 species grow also in South America, 31 in Europe, and 10 at the Cape of Good Hope.

M. Gaudichaud proposes three new genera from the plants he discovered.

1. *Gaimardia*; belonging to the *Restiaceæ*; distinguished by its perfect flowers, 2 opposite glumes, 2 stamens, 2 styles, a bilocular germen, the cells 1-seeded, and a capsular 2-valved fruit.
2. *Pernettia*; the *Arbutus pumila* of Forster.
3. *Pratia*; belonging to the *Lobeliaceæ*; and which, with a corolla nearly resembling that of *Goodenia*, has a fleshy and indehiscent pericarp.—*Bull. Soc. Philom.*

OBSERVATIONS on the POLYEMBRYONATE SEED of MANGIFERA; by Dr REINWARDT. (Acta Acad. Nat. Cur. v. 12.)

Dr Reinwardt in this short (Latin) essay, has made some judicious observations, and points out some errors which have existed, in regard to polyembryonate seeds. Though the number of the pairs of cotyledons amount sometimes to 3 or 4, especially in the seeds of the cultivated plants of *Mangifera Indica*, yet simple embryos are more frequent. In the compound instances, instead of there being one embryo with two cotyledons irregularly divided, as Gærtner supposed, there are really several distinct embryos which possess a common radicle. Polyembryonate seeds occur frequently in the genus *Citrus*.

SERTUM AUSTRO-CALEDONICUM; Auctore J. J. LA BILLARDIERE. Pars Prior et Posterior. 4to. Paris.

This is a very interesting selection from the Flora of New Caledonia, and, though so limited that not more than 80 species are represented, it nevertheless serves to give some idea of the vegetation of a country with which we are scarcely at all acquainted. The genera described by M. La Billardiere are referable to 34 natural families; and, as might be expected, evince the strongest similarity with the vegetation of New Holland. The plates are very beautifully executed.

FLORA BRASILIÆ MERIDIONALIS; Auctore AUGUSTE DE ST HILAIRE. 4to. Paris.

From the known talents and practical knowledge of M. Auguste de St Hilaire, it is sufficient to announce this work in order to recommend it. The rich collections, amounting in number to 6000 or 7000 species, formed by him during a residence of six years in Brazil, it is needless to add, by the most arduous exertions, render him peculiarly qualified for such an undertaking. His assiduity, also, in acquiring the economical history of those species possessing remarkable properties, or distinguished for their utility, enables him to bestow great additional interest upon his labours. M. de St Hilaire has adopted the *Nova Genera*, &c. of Humboldt and Kunth as his model; and it is but justice to say, the whole is executed in a very perfect manner, and is worthy of the patronage of the Sovereign to whom it is dedicated. The entire work will be completed in three volumes. Admirable plates of the most remarkable species accompany each part. The fourth part has reached us.

HISTOIRE des PLANTES les plus remarkables du Brésil et du Paraguay, comprenant leur Description, et des Dissertations sur leurs Rapports, leurs Usages, &c. Par M. AUGUSTE DE ST HILAIRE. 4to. Paris.

Of this highly interesting work six parts have already appeared, each accompanied by five or six plates. The work will not extend beyond two volumes. We believe there is no person so capable of doing justice to an undertaking of this nature as M. de St Hilaire.

ESSAI sur les CRYPTOGAMES des Ecorces Exotiques Officinales; par A. L. FEE. Paris. *(See our first Number.)*

We have received the seventh and last part of this beautiful work. By a note at the conclusion, we find, that the author has proposed 17 new genera. He has also described 298 species, of which 204 are new; and figured 220 species, of which 163 are represented for the first time.

X. MISCELLANEOUS.

Medico-Topographical Notice of Rio de Janeiro. In a Letter from G. W. MAXWELL, M. D. to one of the Editors, dated 15th March 1826.

Rio de Janeiro lies remarkably level. A high mountain rises at the back of Rio, and two ridges descend from it, between which ridges Rio is situate. The streets are narrow, long, and remarkably straight. Rio is a very regularly built town. It extends to the water's edge.

As far as I could learn, I think the population must be little short of 180,000 or 200,000. The major part of the inhabitants, you know, are slaves. Few constitutional diseases visit Rio; so I was told. The Barbadoes leg is common both among whites and blacks. But there is a much more direful topical affection, very common here, viz. swelling of the limbs (most frequently the feet), and their subsequent destruction, provided the cause is not removed. It is occasioned by a little insect (called in Portuguese *Becho*) insinuating itself into the flesh, and there digging to the very bone, causing mortification, which sends forth a horrible stench.

Swelled testicle is another disease remarkably common here, and the doctors say there is no cure for it. Suspension is the only method of keeping it away. Madness I have been told is rather prevalent, especially among the negroes. There are many diseases common to America, which do not make their appearance at Rio de Janeiro. Many of the inhabitants tell me it is a remarkably healthy situation.

OBITUARY.

Died, at his house in Golden Square, London, May 12. 1826, in the sixty-ninth year of his age, John Pearson, Esq. F. R. S. F. L. S. M. R. I. Consulting Surgeon to the Lock Hospital, and to the Publick Dispensary.

Died, on the 15th of May 1826, at his house, Bedford Row, London, aged seventy-two, Richard Temple, M. D. Physician to the Mary-le-bone Dispensary.

BOOKS RECEIVED FOR REVIEW.

Travers on Irritation. Bertin, Traité des Maladies de Cœur. Venable on Diabetes. Bailly, Traité Anatomico-Pathologique des Fievres Intermittentes. Alard de l'Inflammation des Vaisseau Absorbans-lymphatiques. De Saint Martin, Monographie sur la Rage. Fosbroke on the Kidneys. Lanza's Medical Logic. Kennedy on Cupping. Portal sur la Nature et le Traitment de l'Hydropisie. Willan's Miscellaneous Works by Smith. Transactions of the Medico-Chirurgical Society, vol. II. Almanach Medical pour l'année 1826. White on Hydrophobia. Fawdington on Melanosis. Martinet, Manuel de Clinique Medicale. Rudolphi's Elements of Physiology, by How. Bostock's Elementary System of Physiology. Spurzheim on the Anatomy of the Brain, by Willis. Allison on the Formation of a Provisionary Society among the Medical Profession of Scotland. Barry on Respiration and Absorption. Murray's Remarks on the Silkworm. Murray on the Luminousness of the Sea. Les Moyens de parvenir à la Vessie par le Rectum; traduit de l'Italien de Vacca Benlingheri.

QUARTERLY LIST OF NEW PUBLICATIONS.

Transactions of the Edinburgh Medico-Chirurgical Society. Vol. II. 8vo. 14s.

An Inquiry concerning that Disturbed State of the Vital Functions usually denominated Constitutional Irritation. By Benjamin Travers, F. R. S. Senior Surgeon to St Thomas's Hospital, &c. In one volume 8vo, 14s.

Dr Paris's work on Diet, with a view to establish a System of Rules for the Prevention and Cure of the various Diseases incident to a disordered state of the Digestive Functions. In one volume 8vo, 14s.

Novum Organum Medicorum; a new Medical Logic, or the Art of Thinking and Right Reasoning applied to Practical Medicine, exhibiting the principles advanced in a larger work under the same title. By Vincenzo Lanza, M. D. Professor of Clinical Medicine in the Ospedale della Pace at Naples. Translated from the Italian by C. Stormont, M. D.

A New Supplement to the Pharmacopœias of London, Edinburgh, Dublin, and Paris. By James Rennie, A. M. Lecturer on Chemistry, Natural History and Philosophy, London. In one volume 8vo, 12s.

The Anatomy of the Brain, with a general view of the Nervous System. By J. G. Spurzheim, M. D. of the Universities of Vienna and Paris, and Licentiate of the Royal College of Physicians in London. In one volume 8vo, with 11 plates. 14s.

A Cornelii Celsi de Medicina Libri VIII. Ex recens, Leonardi Targæ. Concinnavit Edwardus Milligan, M. D. &c. 1 vol. 8vo, 16s.

An Introduction to the Use of the Stethoscope, with its application to Diagnosis in Diseases of the Thoracic Viscera; including the Pathology of these various affections. By William Stokes, M. D. 12mo, 6s. 6d.

Gleanings of Chemistry, illustrating the Nature of Air, Water, Light, and Heat, &c. Post 8vo, 6s. 6d.

Observations on M. Laennec's Method of forming a Diagnosis of the Diseases of the Chest by means of the Stethoscope, and of Percussion; and upon some points of the French Practice of Medicine. By Charles Scudamore, M. D. F. R. S. 8vo, 5s.

A Chemical and Medical Treatise on the most celebrated Mineral Waters of this Country, with Instructions for their Use. By the same Author. 8vo, 9s.

Practical Botany, an Improved Arrangement of British Plants; with a familiar Introduction to the Linnean System. By William Johns, M. D. F. L. S. &c. 1 vol. post 8vo, 9s.

A Corrected Report of the Speeches delivered by Mr Lawrence, as chairman at two meetings of the Members of the Royal College of Surgeons held at the Freemasons Tavern; with an Appendix, containing the Resolutions agreed to at the first meeting, and some illustrative Documents. Published by request of the Committee appointed at the first meeting. 8vo, 5s.

An Elementary System of Physiology. By John Bostock, M. D. P. G. S. &c. Vol. II. 8vo, 16s.

A Letter addressed to the Medical Profession on the Encroachments on the Practice of the Surgeon-Apothecary, by a New Set of Physicians. By Medico-Chirurgus. 1s.

The Surgeon-Dentist's Anatomical and Physiological Manual. By G. Waite, Esq. Member of the Royal College of Surgeons. 12mo, 5s. 6d.

A Case of Melanosis, with general observations on the Pathology of this interesting Disease. By Thomas Fawdington, Member of the Royal College of Surgeons, London, &c. 8vo, 7s. 6d.

An Account of the Morbid Appearances exhibited on Dissection, in various Disorders of the Brain; with Pathological Observations, to which a comparison of the Symptoms with the morbid changes has given rise. By Thomas Mills, M. D. Licentiate of the King and Queen's College of Physicians. 8vo, 6s.

An Exposition of the State of the Medical Profession in the British Dominions, and of the Injurious Effects of a Monopoly, by Usurpation, of the Royal College of Physicians in London. 8vo, 8s.

Botanical Terminology, or Dictionary explaining the Terms most generally employed in Systematic Botany. By G. N. Lloyd, Esq. 12mo, 7s.

WORKS PREPARING FOR PUBLICATION.

A Manual of Chemistry, with its Application to the Arts; intended as a Text-Book for Students attending Mechanics' Institutions. By Andrew Fyfe, M. D. F. R. S. E. Lecturer on Chemistry to the Edinburgh School of Arts.

Experimental Researches on the Influence of Atmospheric Pressure upon the Venous Circulation, Absorption, and the Prevention, and the Cure of Hydrophobia, &c. By Dr Barry of Paris.

A Manual of Clinical Medicine, containing the Symptoms of Diseases and the Appearance on Dissection; with the Methods of Examination applicable to Affections of the Head, Chest, and Abdomen. Translated from the French of Martinet, with Notes, by Jones Quain, A. B. Member of the Royal College of Surgeons. 1 vol. 18mo.

A Treatise on the Nature and Cure of Rheumatism, with Practical Remarks on Neuralgia or Painful Affection of the Nerves.

A Treatise on the Diseases of Females. By John North, Surgeon-Accoucheur.

A System of Pathological and Operative Surgery, founded on Anatomy, illustrated by Drawings of Diseased Structure, and Plans of Operation. By Robert Allan, F. R. S. E. and F. A. S. E. Fellow of the Royal College of Surgeons, &c. Vol. III. Part II. which will complete the work. 8vo.

Part I. of a Dictionary of Anatomy and Physiology. By Henry William Darhurst, Surgeon. The work to be completed in three parts.

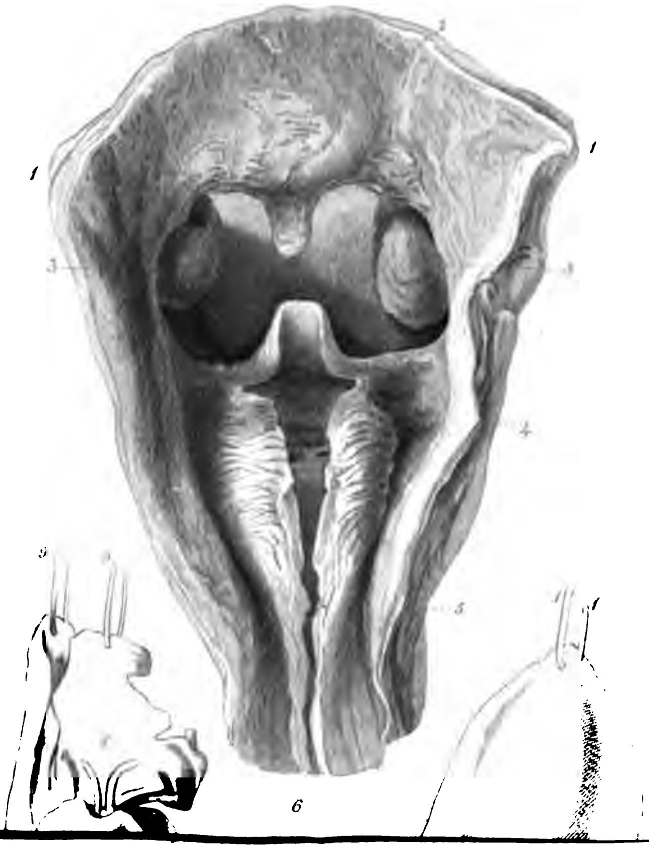
Synoptical Tables of the Materia Medica, corresponding to the London Pharmacopœia of 1824. By the same Author.

The Elements of Chemical Science. By Edward Turner, M. D. Member of the Royal College of Physicians, and Lecturer on Chemistry, Edinburgh. 1 vol. 8vo.

P. Neill, Printer.

PLATE I.

Fig. 1



W. Miller

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PART I.

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Sir,

SINCE the publication of my Observations on Spasm of the Passages for the Food, the Bile, and the Urine, in last Number, I have received the following important communication from Mr Allan, surgeon, which affords a striking illustration of the spasmodic power of the bladder of urine. I was present at the operation to which Mr Allan has alluded, in the performance of which the dexterity of the operator was no less conspicuous than his coolness and sound judgment.—I am, &c.

Alex. Monro.

Letter from Robert Allan, *Esq. F.R.S.E., Surgeon to the Royal Infirmary, and Lecturer on Surgery, in Edinburgh, to* Alexander Monro, *M. D., F.R.S.E., &c.*

"57. York Place,
June 20. 1826.

"Dear Sir,

"You will no doubt recollect of having been present, ten years ago, at an operation of lithotomy, performed by a young surgeon, on which occasion I acted as his principal assistant. The bladder was soon cut into, and a stone of some magnitude readily extracted; but we were conscious of the presence of another stone, although the operator, after the repeated introduction of the forceps, failed to extract it. The difficulty of extraction arose from the bladder spasmodically contracting upon the stone, and thus preventing the forceps from coming into contact with it. I introduced my finger into the wound, and felt a stone above the pubis, which was firmly held in this situation by the spasmodic contraction of the bladder. I could just reach the stone, and turn it round and round, but my finger was too short to dislodge it. As the operator was not provided with a lever, or with curved forceps, I advised that the patient should not be kept longer upon the table, but that he should be put to bed, and that as the opening was free, when the spasm of the bladder was relaxed, and suppuration established, there was little doubt but that the stone would be easily extracted; whereas, by persisting in fruitless attempts to extract, the patient would be so much exhausted, that his danger would be thereby greatly increased. The patient was therefore laid in bed, and when I went to visit him, along with his surgeon, on the evening of the third day, I introduced my finger into the wound, and hooked out, with the utmost ease, a stone about the size of a turkey-bean, which was lying in the inner opening. The patient recovered without one bad symptom, and this operation I have frequently revolved in my mind, and kept the case in view, as a guide in similar circumstances.

"In a conversation which I lately had with you, respecting the spasmodic action of the bladder, you observed, that you thought this untoward circumstance might be, in a great measure, or altogether prevented, by exhibiting a tobacco clyster, or giving a large dose of opium, a short time before the operation, and you suggested the propriety of this practice. My objections to the tobacco clyster are, that we can never exactly know the extent of its influence on the system; a quantity which, in one person, will produce little effect, will, in another, depress the powers of life to a dangerous degree; and, as far as my experience goes, patients with strangulated hernia, who have received the tobacco clyster, previous to being subjected to an operation, never recover so well as those to whom it has not been administered. I should therefore give the preference to the opium.

" On the 31st of last month, a boy, three years and a half old, presented himself with stone in the bladder. From the irritability of system incident to this period of life, from the rectum being prolapsed immediately on the sound being introduced into the bladder, and from the obstruction which I experienced in passing the instrument through its neck, when this viscus was empty, I was prepared for some difficulty in the extraction, and therefore judged this to be a proper case for the trial of the opium. I ordered the patient to be placed upon a milk and vegetable diet, to be immersed in the warm-bath at bed-time, for several nights in succession, to have five minums of laudanum each night, and his bowels to be kept freely open by laxatives. The rectum was washed out with tepid water, on the morning of the operation, and two hours before cutting, he had a draught containing fifteen minims of laudanum.

" On the 6th of June, I performed the lateral operation with the knife; and, on passing my finger into the bladder, readily felt a stone, but I had no sooner introduced the forceps than it disappeared. This repeatedly occurred; and it is worthy of remark, that if I withdrew my finger for a minute, on again introducing it I readily felt the stone; but when I moved my finger freely within the cavity of the bladder, it was as effectual in exciting spasmodic action, as when the forceps was introduced. I changed the posture of the patient, and injected some tepid water, but with no advantage. I now ceased to introduce any metallic instrument, and after the bladder had remained for a little while quiescent, again introduced my finger slowly into the wound, when I felt the stone above the pubis held in the contracted folds of the bladder. On attempting to hook the stone, it fell down to the lower and anterior part of the bladder. I then put my finger upon it, passed along the finger a small lever, which I had got made for the occasion two days before the operation, and, with the assistance of another finger in the rectum, easily turned out a rough stone, the size of a French olive.

" It is just a fortnight to-day since the operation; for the last few days all the urine has been passed by the urethra, and the wound is completely cicatrized. During last night the boy made water only twice, he is now running about, and is in every respect well.

" *Quære.*—When the incisions are free, and the delivery of the stone prevented by the spasmodic contraction of the bladder, as this will not relax till the patient is exhausted, and brought into danger, is it not the preferable practice to put the patient to bed, instead of employing force, or persisting in fruitless attempts at extraction? "S'il est de l'honneur du chirurgien (says Le Dran), d'oter la pierre, son honneur est encore plus attaché à la guerison du malade. Que pourroit on penser, d'un lithotomiste, qui ne manqueroit jamais d'oter la pierre, mais dont tous les malades periroient par l'inflammation, dans les premiers jours de l'operation?"

"I am, dear sir, yours most faithfully,

"ROBERT ALLAN."

"*To Alexander Monro, M. D. Professor of Anatomy and Surgery in the University of Edinburgh,*"
&c. &c. &c.

Cases of Poisoning from Arsenic, with a new and satisfactory Mode of indicating the Poison, to the Fortieth Part of a Grain, in the Metallick Form. By ROBERT CHRISTISON, M. D., F.R.S.E., Professor of Medical Jurisprudence in the University of Edinburgh.[*] (Concluded from last Number.)

"*External Appearances.*—THE integuments covering the lower part of the neck, and superior portion of the sternum, were of a dark-red appearance; that covering the abdomen, and more especially on the right and left sides, were of a leaden hue,—little or no perceptible change on the lower extremities.

"*Internal Appearances.*—The whole outer surface of the stomach was highly vascular, and of a dark livid colour, bearing strong marks of recent and violent inflammation in that viscus, and containing about three or four ounces of fluid.

"The small intestines were covered with a tinge of pale red, but in no part assuming the dark livid appearance, as exhibited in the outer coat of the stomach. The large intestines were of a healthy aspect, as were also the other viscera of that cavity.

"Having neither the proper tests, nor the conveniency on the island, for analyzing the suspected fluid, I postponed the examination of the inner surface of the stomach and intestines until my return to K——, where, assisted by Dr —— and Mr ——, the inner coat of the stomach was found streaked with broad patches of a dark livid colour, and interspersed with yellow spots of a golden appearance; and at the part where the inflammation seemed to be most violent, there was an irregular figure or ring, about a line in breadth, and an inch in circumference, of the same golden appearance, firmly adhering to its inner coat; but no abrasion or ulceration in any part of the stomach or intestines, nor any unnatural appearance in the latter, unless a slight enlargement or fulness of some of their bloodvessels.

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[*] From the Edinburgh Medico-Chirurgical Transactions, vol. ii.

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"Although seventeen days had intervened from the time of his death to the day on which the body was examined, yet, from the comparatively slight degree of decomposition that had taken place, as well as from the great contrast between the morbid appearances of the stomach and intestines, there can be no hesitation in saying, that violent inflammation of the former may be considered as the immediate cause of death.

"*—— *——, *Surgeon.*"

I shall now proceed to give a chemical analysis of the contents of the stomach. The report contains the following paragraph:

"In analyzing the suspected fluid by the different tests used for detecting the presence of arsenic, we have not been able to discover any marks or trace of that mineral; but, from our not having the chemical apparatus necessary for a complete trial of the more delicate tests, it is recommended, provided it can be legally done, that a still farther trial should be made by some practical chemist, in ascertaining the presence of poison; and, for this purpose, a part of the fluid has been reserved."

In conformity with this recommendation, the surgeon was instructed to send the remainder of the contents of the stomach to Edinburgh, which was accordingly done, and it was committed to me for analysis.

The substance transmitted was a thick, slightly viscid, putrescent, dirty-grey fluid, with a few floating coagula; and it amounted to an ounce and a quarter. It was poured into a porcelain vessel, diluted with the washings of the phial, boiled briskly for fifteen minutes, and thus changed into a transparent liquid, with dirty ash-grey flocks suspended in it. The solid matter being separated by filtration, a clear fluid was obtained, of a very pale, straw-yellow colour.

A small portion of this fluid was tested with lime-water, and the ammoniacal nitrate of silver. Lime-water caused a very scanty, dirty greyish-white, flocculent precipitate. The ammoniacal nitrate of silver caused a copious, dirty greyish-white, pulverulent precipitate, without the slightest tint of yellow.

As the arsenic, if present at all, evidently existed in very minute proportion, and the fluid was so composite as to render the foregoing tests inconclusive; instead of wasting any more of it upon trials with the other liquid reagents, the whole of the remainder, with the washings of the filter, was acidulated with acetic acid, and subjected for fifteen minutes to a stream of sulphuretted hydrogen gas. It acquired, in consequence, a deeper yellow colour, and muddy appearance; which, when the excess of sulphuretted hydrogen was driven off by ebullition, gave place to a considerable precipitate, of a pale lemon-yellow colour, and composed partly of fibrous flocculi, partly of very minute, brilliant scales. The presumption that arsenic existed in the fluid was thus strong.

Next morning the precipitate having fallen down, the supernatant fluid was withdrawn with the pipette, and its place supplied with distilled water. The brilliant scales then became still more distinct. The operation of subsidence and affusion being repeated the same day, the precipitate was thrown upon a filter; and next morning, when the water had passed through, the filter was compressed, and partially dried between folds of bibulous paper. The moist precipitate was then removed, dried in fragments with a gentle heat, dropped into the bottom of a slender tube, with a bulb-like thermometer at one end, and covered with a little black flux; which was dropped through a paper tube, so as not to soil the glass. The whole material just filled the ball at the end of the tube. Heat was then cautiously applied with a very small spirit-lamp flame. Some water disengaged at first was removed with a roll of filtering paper. On the farther application of heat, which was raised to full red, a distinct crust was sublimed into the narrow part of the tube. It was smooth, bluish-grey, and brilliant, like polished steel, externally; crystalline, sparkling, and iron-grey, internally, like the fracture of fine steel.

The proof of the existence of arsenic was thus decisive. For no other known substance can yield, with sulphuretted hydrogen, a yellow precipitate, from which such a metallic crust can be sublimed. But as I was fully sensible of the influence which the foregoing analysis would have on the issue of the trial, I resolved to leave nothing undone to establish the nature of the crust precisely. For this end, I subjected it to a test of great delicacy, elegance, and facility of application, and vastly superior in every respect to the supplementary test recommended in my former paper. It was suggested to me by my friend Dr Turner, and, so far as I know, has not yet been made public. The portion of the tube containing the flux being removed by melting and drawing it out, the crust was driven up and down by the spirit lamp-flame. At first it kept its polish and iron-grey colour. But at length it was all converted into little detached crystals, white, translucent, of adamantine lustre, and evidently shewing triangular facets under a microscope of four powers. These crystals, I need hardly add, were octaedral crystals of oxide of arsenic. The tube was weighed before and after the crystals were washed out with distilled water, and their weight thus proved to be one-twentieth of a grain.

The solution, amounting to a drachm, was divided into three portions, and subjected to the ammoniacal sulphate of copper, the ammoniacal nitrate of silver, and sulphuretted hydrogen. These tests all gave pointed indications; but it required very cautious management to make them distinct.

This analysis left no doubt that the deceased had taken arsenic; and as the symptoms and mode of death, as well as the morbid appearances, corresponded with what arsenic is known to produce, I could not hesitate to ascribe his death to its administration.

Before proceeding to the second case, I shall make a few remarks on the analytic process just related, with the view of establishing its delicacy, and the precautions required for applying it successfully.

I believe it is pretty generally allowed, that there is no method by which oxide of arsenic is more completely thrown down from any solution, than by a stream of sulphuretted hydrogen gas; and, therefore, it may be safely assumed, that the quantity in the matter transmitted to me could be little more than a twentieth part of a grain. This minute quantity will never fail to give, in careful hands, the most complete evidence. I have frequently tried it in presence of other people; and every one has been fully satisfied, that the characteristic physical properties of the metal, and of the oxide, may be shewn with certainty. I have likewise tried portions even more minute. A fortieth part of a grain of oxide, dropped into the bottom of a tube, and covered with black flux, gave a crust that exhibited distinctly the above mentioned characters. I have even succeeded with a hundredth of a grain; but, in that case, the lower part of the tube must not exceed the fifteenth of an inch in diameter, and great care must be observed in applying the heat, otherwise the metal is driven off suddenly, is diffused over a large surface, and has neither its iron-grey colour nor crystalline appearance. The error cannot be remedied by concentrating the crust; for, by attempting to do so, the metal is generally oxidated. Dr Turner has also succeeded in obtaining a distinct metallic crust from a hundredth of a grain.

I apprehend, that, if no other proof could be got except the formation of such a crust from a yellow precipitate, thrown down by sulphuretted hydrogen, these two characters alone would be quite sufficient to establish the presence of arsenic. That is, no other substance can form with sulphuretted hydrogen a yellow precipitate, which, when reduced, yields a crust with the physical properties specified above. Antimony is the only other substance which is likely to occur in medico-legal inquiries, and which can give the yellow precipitate; but the sulphuret of antimony does not yield an atom of metallick sublimate. The compounds of antimony, indeed, are said to undergo a kind of spurious sublimation, in the act of being reduced; but, if this takes place at all, it never does in a small tube. I have repeatedly reduced the sulphuret, the oxide, and tartar-emetic in that way, and have never observed any metallick sublimate. * * *

But the test proposed to me by Dr Turner is far more accurate and delicate. He has found that the best method of applying it is to hold the part of the tube, containing the crust, a short distance above a very small spirit-lamp flame; that the crystals are most distinct when the sublimation goes on slowly; that, when it is conducted rapidly, they form a white crystalline powder; that the tube, where the oxidation is to be carried on, must not be soiled with the flux, otherwise the oxide unites with the glass; and that, with proper precaution, he can procure crystals with evident triangular facets, from the metallick sublimate of a hundredth part of a grain. All these statements I have repeatedly verified. The crystals may even be obtained when the crust is too minute or too much dispersed for its characters to be recognised.

In the analysis in the case, I have even carried the process a step farther still, by subjecting to three of the liquid tests the oxide finally formed. This was quite unnecessary; nor should I recommend any one to follow my example, unless merely to gratify curiosity; because, without very great care, and various little manipulations, the proper precipitates cannot be got from so small a quantity. It would not be difficult, indeed, to get a true precipitate from a twentieth of a grain, with any one of the liquid re-agents. But then, the whole four should be applied to that quantity. Taking this into consideration, therefore, I am certain, notwithstanding all that has been said of the delicacy of the liquid re-agents, that, in the circumstances in which I was placed, no one but a chemist of very great skill, would procure with them alone, such evidence as would justify a decided opinion.

In consequence of some farther experiments, I have no hesitation in adding, that, under all circumstances, whether the arsenic be in a mixed or in a pure solution, provided it be present in such minute quantity, a person about to be sworn in a criminal court, would find equal difficulty in making up his mind from the operation of the liquid tests. I do not pretend to say, that, even when it is necessary to apply them all, they will not detect arsenic, where it is impossible to show it clearly in its metallick form. The method of applying them suggested by Dr Ure, namely, by putting a drop of a solution on a plate of glass, drawing radii from it, and touching the radii with the tests, would, in an ordinary analysis, satisfy a chemist of the presence of arsenic, when, certainly, the process of reduction would be of no use. It may be doubted, however, if this concession can be justly made, when the arsenic is dissolved along with such other substances, as oblige us to corroborate each test by various preliminary or collateral experiments. But, waving that consideration, would such minute evidence satisfy a person about to be sworn in a court of law? or, If it satisfied him, would it also satisfy judges and jurymen? I fear not. It is well known to every one who has been concerned with a criminal court, that its members take great liberties with scientific evidence, and repose but little faith in scientific refinements. And, so far as regards the present subject, I must confess, I could hardly find fault with a jury, who, viewing the nice management and delicate precautions required for obtaining pointed results with the fluid tests, and taking into account the important tendency of the conclusions drawn from them, should decline putting confidence in the opinion of any witness, more particularly if the witness, as too often happens, is not a practised and skilful chemist.

Some may think at first view, that what is now said applies equally to the method I have recommended. But this I cannot admit. Any one who has but a moderate knowledge of practical chemistry, may manage the manipulations; the characters evolved at each step, are neither difficult to appreciate, nor liable to any important fallacy; and the whole process may be very easily explained to a person of common understanding.

The tendency of the preceding remarks, then, is to do away with the liquid re-agents altogether in medico-legal analysis. Under all circumstances, *the plan I propose is more accurate and conclusive*,—under all circumstances, *it is more easy of application*,—and under all circumstances that can occur in the practice of legal medicine, *it is likewise more delicate.* As trial tests, indeed, the liquid re-agents may still be retained. Yet I may observe, there appears little occasion for them even as such; for the sulphuretted hydrogen used in the first step of the proposed process, although, perhaps, not the most convenient, is certainly the most useful trial-test, since it gives indications when the rest fail nearly or altogether *; and its indications are the least liable to fallacy.

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* I did not use the ammoniacal sulphate of copper as a trial test; because it is known not to act well in animal infusions.

CASE II.

E—— O——, a girl, 14 years of age, either was, or thought herself, ill-used by the family where she lived as a servant, and several times tried to quit her service, but was always brought back by her friends. The last time this happened, was a week before her death. In consequence of being thus thwarted, she was occasionally dull and melancholy; but she was not particularly so on the morning when she took ill; on the contrary, she seemed rather in good spirits, and went about her work cheerfully. She was a stout girl; and, except that she complained now and then of headache, her health was habitually excellent.

About two in the afternoon of the 23d December last, hardly two minutes after she had been seen at her work, and apparently in good health, her mistress found her in bed, yawning and retching a little, and complaining of headache, sickness, and pain in the bowels. As she did not appear by any means very ill, and the family were far from suspecting any particular cause for her illness, they did not observe her very closely; and hence a precise account of her state cannot be obtained. She complained, however, of thirst, and of a sense of coldness; one of the children of the family saw her vomit a little once; and some stuff she must have vomited was found after her death on her shift and on the floor. There could not have been any purging, as she kept her bed till she died, and no such marks were to be seen about it. At half-past five, the pain in the bowels continuing, her mistress gave her some whisky punch, which appears to have been the only thing she took during her illness, or after breakfast. About six she suddenly became blue in the face, and seemed to be fainting away. A surgeon was therefore sent for immediately, and various restoratives were used, but in vain; she made one or two inspirations after his arrival, and expired without a struggle five hours after she first took to bed.

One or two evenings before her death, a girl answering her description and appearance, went to a druggist's in the neighbourhood, and asked for a pennyworth of arsenic. The person in the shop, a partner of the establishment, after simply inquiring what it was for, and receiving for answer, that it was to kill bugs, gave her two drachms of oxide of arsenic, without even putting a label on the paper; and the other partner, who chanced to enter at the moment, merely told her to take care of it, as it was a deadly poison. Her mistress's people did not send her for poison to kill bugs; and, indeed, there were not any bugs in the house.

The body was taken to a village about eight miles from Edinburgh, and buried three days after death. But, at the request of her friends, a judicial inquiry into the cause of her death was undertaken by the Sheriff of this county; and the body was disinterred, in pursuance of a warrant for the purpose, and examined by my friend Mr Watson and myself, the day after burial. The inspection was conducted by Mr Watson.

There was not any outward appearance worthy of remark, except that the countenance had a very calm expression, and that the skin was nowhere livid. The latter fact I specify, because some absurdly enough imagine, that lividity is invariable after poisoning with arsenic.

In the head, the only thing of note was a greater turgescence than usual of the veins of the superficial and ventricular membranes of the brain,—not so great, however, as to amount decidedly to morbid congestion.

The organs in the chest were perfectly natural in appearance.

The veins, as seen on the outer surface of the stomach, were somewhat gorged. The stomach, after being secured by a ligature at each end, was taken out, emptied of its contents, and slit up. The contents were reddish-coloured and limpid, with a few albuminous-like flakes, but no white powdery particles, and they had a smell of some vinous or spiritous liquor. They measured 11½ ounces. The inner membrane of the stomach was every where mottled with small coalescing patches, of an exceedingly faint, cherry-red colour, confined to the villous coat; and around the upper orifice, where there were a few more distinct and very minute scarlet specks, the villous membrane could be peeled off with facility.

The intestines, viewed externally, appeared much injected with dark blood. Internally, the villous membrane had the same appearance as in the stomach; but the shade was even paler. They contained hardly any contents; the small intestines particularly were quite empty.

The contents of the stomach, as well as the stomach itself, were taken to Edinburgh to be analyzed; but we were not permitted to carry away the intestines, and it was not without difficulty that we obtained even the stomach. In fact, throughout the whole examination, we were much obstructed by the friends and surgeon who accompanied them; and the wrangling in which we were thus involved, coupled with a deficiency in the warrant, led to the neglect of many points which it was of consequence to ascertain.

Besides the stomach and its contents, we obtained for analysis, from one of the friends present at the inspection, a white powder found in a box belonging to the deceased.

The analysis of these three articles was performed by myself, and most of the essential steps were taken in Mr Watson's presence.

1. I commenced with the powder. It was heavy for its bulk, and weighed 26 grains. A small quantity, subjected with black flux to the process in a glass-tube, gave an abundant crust, possessing all the physical properties of metallick arsenic (the garlick smell included), and yielding crystals, with triangular facettes, when heated in the way formerly mentioned. The powder, therefore, contained a large proportion of arsenic. Another quantity was heated on an iron-plate; it sublimed at a low temperature in white fumes, and left a barely perceptible residue. The powder was, therefore, very nearly pure oxide of arsenic.

2. The contents of the stomach were evaporated to a third of their volume, and filtered. The fluid, which had a very pale straw-yellow colour, gave a scanty, greyish-white cloud, with lime-water, a copious dirty greyish-white precipitate, with the ammoniacal nitrate of silver, and underwent no change with sulphuretted hydrogen. These tests, therefore, did not give any indication of the presence of arsenic. The remainder was evaporated to the volume of half an ounce, when it acquired a brownish-red colour. In this state, when treated as in the former case, with sulphuretted hydrogen, it gave an evident brownish-yellow flocculent precipitate, which, however, was so scanty, that, before proceeding farther, I thought it right to wait for the result of the analysis of the stomach itself.

3. Accordingly, the stomach was cut into small fragments, and boiled briskly for half an hour, with a pint of water, in a porcelain basin, glazed with porcelain. The larger masses of solid matter were then removed, and the fluid filtered. One-half of it passed through in two days, and was subjected to analysis by sulphuretted hydrogen, after previous concentration to the volume of half an ounce. A dirty lemon-yellow precipitate was thus obtained, amounting apparently to twice the volume of that procured from the contents. As I was sure I had now got enough to try the test of reduction, I mixed the two precipitates, and, following the course pursued in the former case, I obtained precisely the same results. The quantity of oxide eventually formed I did not weigh, but it was certainly not greater than a twentieth of a grain. The whole quantity of oxide, including what was in the contents, and in that part of the

decoction of the stomach which was not filtered, could not have surpassed a fifteenth of a grain.

The analysis, together with the symptoms, left no doubt that the girl had died of poisoning with arsenic.

This case presents several particulars, both for comment and instruction. I shall be very short, however, in my remarks, considering the detailed account given of the former.

In the *first* place, the total absence of morbid appearances in the stomach, is a rare fact in the history of poisoning with arsenic. It is not perhaps very generally known, yet it has been observed before *. It proves that the arsenic had remained but a short time in the stomach during life; and, therefore, accords with the account given of the girl's illness, which probably did not last above five hours. In shortness of duration, this case corresponds with every other hitherto published, in which the stomach was found in a natural state; and it likewise corresponds in the symptoms having been by no means well marked.

Secondly, The want of morbid appearances, together with the almost total absence of arsenic in the stomach, and the fact that the girl was fasting at the time she took it, render it not improbable that it had been taken in solution. It is not easy to account otherwise for so small a quantity being found in the stomach, when she vomited so little, and had so short an illness. It may be objected, that this method of taking arsenic is very rarely resorted to, and would not likely occur to an ignorant girl. But, on the other hand, she had several times taken laxative salts against her mistress's wish, for the purpose of making herself ill; and she might consequently be led to use the arsenic in the same way as the salts.

Thirdly, With regard to the proof of poisoning, it is clear that the symptoms and appearances after death, while they do not contradict it, hardly uphold it even by presumptive evidence; that, in short, the case, in a legal point of view, hung entirely on the chemical evidence.

Fourthly, By any other method of analysis, particularly by those practised in Britain, there is good reason for believing that the poison would not have been detected. I need scarcely point out, therefore, how important it is that the proposed method should be minutely examined, and become generally known. In my own hands it has hitherto proved susceptible of universal application, and of yielding the most positive proof in the most unlikely circumstances; and I am satisfied, that, in the hands of another, it will prove easy of application, though he should be neither a very adroit, nor a very practised operator.

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* I may refer to the following cases, as the most pointed of the kind which I have met with in the course of my reading:

Etmüller, Ephemerides Acad. Cæsaréo-Leopoldinæ, 1715, Obs. 126.
Laborde, Journal de Medecine, t. lxx.
Jæger, de Effectibus Arsenici, Diss. Inaug. Tubingæ, 1808, p. 23–39.
Chaussier, Orfila Toxicologie Générale, i. 155. 1^{ere} edition.
Medical and Physical Journal, xxxiv.

It is not too extravagant to assume, that, had the process been earlier known, several late judicial cases would have been made perfectly clear, which, for want of good chemical evidence, have excited a considerable ferment in the public mind, and thrown our courts into doubt and embarrassment; and that henceforward we shall not often hear of criminals escaping from justice, because the medical witness could not discover the poison.

I have said, that I have hitherto found this method susceptible of universal application. I can foresee the possibility of one difficulty, however. If the fluid containing the arsenic is ropy and viscous, even after being boiled and acidulated with acetic acid, the sulphuret thrown down may be mingled with so much animal matter, that the metallic sublimate is not distinctly formed, on account of the great quantity of empyreumatic matter suddenly projected along with it. This has happened to me once only out of at least a hundred experiments. In that case, an addition must be made to the process. The criterion by which we may know that the additional process is required, is the colour of the precipitate. If the colour is lemon-yellow, or pale brownish-yellow, it is unnecessary; if it is cream-white, the simple process will probably fail. The plan I should prefer is a modification of that proposed by Berzelius, and of the method followed by Roloff (p. 279.), for determining the quantity of arsenic in the sulphurous precipitate. Treat the precipitate with nitric acid, and thus convert the sulphuret into sulphuric and arsenic acids; dissolve and filter, neutralise with ammonia, and throw down the arsenic and sulphuric acids with nitrate of lead; reduce the precipitate, which contains arseniate of lead, in the usual way.

Lastly, The unhappy fate of this poor young girl, who was only fourteen, and looked two years younger, taken along with the frequency of similar accidents, will naturally raise our astonishment, that our country should be so long in following the example of the continental governments, by enacting police regulations for the sale of poisons, particularly in great towns. It may be easily imagined what abuses prevail, when arsenic could be got by such a purchaser. I am far from reflecting on the apothecaries of this town generally. I know that many of them never sell the common poisons, but when they know the buyer. They will of course remember, that penal statutes are never intended for the honest and conscientious part of society.

Case of Sphacelated Urethra Regenerated. By Dr JOSEPH BROWN, Physician, Sunderland.

G. NESBITT, ætat. 50, has passed his urine with considerable difficulty for nearly two years, and has been in the habit, during the whole of that period, of passing a small metallick sound into the urethra to assist its evacuation.

May 14.—I find him labouring under violent inflammation of the scrotum, penis, and the whole of the hypogastrium, with great swelling and tension along the course of the urethra, which can be felt like a hard cord through the inflamed integuments. He passes his urine fully as well as he has done during any part of the period mentioned. There is no tumour of the hypogastrium but what is caused by the inflammation of the integuments. Pulse is 90, full and hard. He has been bled by Mr Ward, the surgeon in attendance. A vein was again opened in the arm, but the patient became faint after a few ounces of blood had flowed. *Liquor plumbi acetatis dilutus* to be applied to the inflamed parts; cathartic medicine to be given; and the *liquor opii sedativus* to be administered in the evening.

He emptied his bladder well and frequently without the assistance of the sound; but the inflammation remained unmitigated till the 17th, when there was perceptible fluctuation towards the left side of the abdomen, about two inches above the pubes. This abscess was opened on the following day, and a tea-cupful of abominably fetid pus discharged.

19*th*,—Tumefaction considerably abated; discharge profuse. Extensive sloughs have formed on the right side of the opening made by the lancet; and appear to be extending across the hypogastrium. He passes his urine pretty freely by the urethra.

℞ Quiniæ Sulphatis gr. ij.
Tincturæ cinchonæ ʒj.
Aquæ cinnamomi ℥j. Misce, ut fiat haustus, omni quarta hora sumendus.
Liquor opii sedativus vespere ut antea.
Nutritious diet, with malt liquor and wine.

20*th*.—When he was passing his urine this morning, a few drops were evacuated by the urethra, but by very much the larger portion through the wound in the hypogastrium; and, in the evening the whole flowed through this latter channel. More than half a pint was discharged in this way in my presence. He has perfectly the power of retaining it; it never flows from him involuntarily in any position of the body. The sloughs are separating; his pulse is 76, firm and good: his tongue clean. Medicine and diet as before.

23d.—On examining the very extensive wound across the hypogastrium, left by the detached sloughs, something was observed to protrude from within it, which was drawn out, and found to be a large mass of sphacelated matter, four inches in length, comprising fully three inches of the urethra. For more than two inches the canal was entire, and a probe could be passed through it; the remaining portion of it was open, and was much incrusted with calculous matter. This extensive slough is preserved in spirit, and all to whom it has been shewn have agreed with me in the opinion, that the portion which I have regarded as the urethra, is in reality a part of that canal. In the interstices of the calculous matter its fibrous appearance can be distinctly traced.

The wound is very large, stretching entirely across the hypogastrium, and through it the whole of the urine is discharged by the voluntary efforts. Pulse 72; tongue clean; bowels regular; food relished; sleep refreshing. Medicine and diet as before.

On the 5th of June the bladder was emptied through the urethra, the urine flowing in a full stream; and to-day, (June 23,) I saw my patient walking in the streets, the ulcer in the hypogastrium being almost entirely healed, and, to use his own expression, he makes water as well as ever he did in his life, none having passed through the wound in the abdomen since the fifth instant. At the time the urine was discharged through the preternatural passage, attempts were once or twice made to introduce an instrument into the bladder through the urethra, but as they did not succeed, and gave pain, they were speedily desisted from. I am glad that they were so; for they might have marred, and certainly could not have rendered more efficient, the efforts of those sanative powers which nature in this case exerted so beneficially.

Description of the Plate.

Figure 1. in Plate III. represents the sphacelated portion of the urethra, with a bristle *b*, in the urinary passages. About *a*, are seen small depressions, probably the orifices of the prostatic ducts.

Case of Poisoning from Hyssop Tea. By WILLIAM DONALDSON, Esq. Stonehaven, Surgeon, R. N.

I WAS called to see Widow Rankin, and daughter, residing at Newtonleys, two miles from this place, said to have been poisoned by drinking hyssop-tea. I found the mother sitting in bed, completely in a state of delirium, singing, and moving her hands continually, as if she had been at her usual occupation of spinning; in fact, she seemed in a state of great exhilaration. The pupils of both eyes were amazingly dilated, more so than ever I saw them, even in compression of the brain from external injury. This gave to the eyes rather the appearance of those of owls, than of a human being. The hands and feet were cold and clammy; the pulse small, very frequent, and irregular. The face was pale, and perspiration stood in beads on the nose: she was quite unconscious of all that was passing around her, and could not be made to comprehend any thing said to her. The daughter was sitting by the fire in an arm-chair, quite sensible and collected. She complained of sickness and nausea at the stomach, headache, vertigo, so that she was unable to stand, and dimness of sight. The pupils here were also dilated, the pulse frequent and full, and the skin rather warm than natural. She made the following statement: that both her and her mother were in the habit of breakfasting on hyssop tea, which they had both taken that morning as usual, her mother having drunk three cupfuls and a half, and she two cupfuls. That soon after they had finished their repast, her mother began to complain of giddiness of the head, and that "the furniture in the room was dancing, *a reel*, around her." She assisted her to bed, and shortly after she began "to wander in her speech," and had got from bad to worse, until she became in the state already described.

The first thing that she herself felt was also giddiness in the head, and shortly after nausea, succeeded by severe headache and throbbing in the temporal arteries. She complained of thirst, and a sense of stricture about the fauces. On asking her if she had preserved the hyssop which they had been using, she said she had, and accordingly produced the teapot, with its contents, just as they had left off using it. On examining them, I easily recognised an almost entire young plant of henbane (*Hyoscyamus niger*), which formed more than half the contents of the pot. How they could have put it in with the hyssop I know not, as certainly the appearance is very dissimilar. This explained the cause of the symptoms at once, and convinced me that no time was to be lost. Twelve grains of tartar emetic were dissolved in two ounces of water, one half of which was immediately given to the daughter, and the other to the mother. The jaws of the latter were forced open with the handle of a horn spoon, and the liquid put into her mouth, which she swallowed over immediately, and in this way every thing that was given to her was got over; tepid water was always given to both at short intervals. Ten minutes having elapsed, and no appearance of vomiting in either, the same medicine, and same quantity of it, was given to both; this, at the end of ten minutes, produced vomiting in the daughter, which was encouraged by plentiful libations of tepid water; but still no effect as regarded the mother, and she had a like dose administered for the third time, which still failing to produce the desired effect, a scruple of sulphas zinci, dissolved in three ounces of water, was got over. The fauces were repeatedly irritated by means of a goose feather, and every accessary means used that could be devised, but still without producing even the slightest effort to vomit. Another scruple of sulphas zinci was given, and after that, at proper intervals, two doses of sulphate of copper of ten grains each, but still all this was quite unavailing. I regretted much not having a stomach-pump, nor any thing that would form a substitute, for I considered the case as almost, or altogether hopeless. A large blister was now applied immediately below the ensiform cartilage; and, as I was afraid to push the mineral emetics farther, ʒi of ipecacuanha was given, and repeated three times. At an interval of half an hour after the last dose, and two hours after the application of the blister, full vomiting most fortunately took place, which was soon followed by an evident amelioration of the symptoms; and, next day, her only complaint was great debility, and the soreness of the blister. From this date both mother and daughter gradually recovered. In both it became necessary to keep the bowels open by laxatives; in fact, the mother was some considerable time before she could do without them. I was much astonished that she never afterwards complained of any pain either in the stomach or esophagus.

P. S.—I saw the patients within an hour and a half after they had breakfasted.

Case of Disorganization of the Stomach of an Infant, with Pathological and Practical Remarks; intended as supplementary to a former Paper on the same Subject. By JOHN GAIRDNER, M. D., Fellow of the Royal College of Surgeons.

HAVING communicated to the Society, in a former paper[*], the result of my observations on a peculiar kind of disorganization of the stomach of infants, and having collected, into a condensed view, the recorded experience of some foreign writers on the same subject, I am desirous to give to the profession such additional information illustrative of it, as my own observation, since the date of that paper, enables me to supply. I have only seen one decided case since that period; and, in that case, the symptoms were so marked, as to enable me, when I first saw the patient, to recognise the existence of the disease, and to warn its parents of the impending danger. I have accordingly preserved minute notes of the case, taken at each of my visits, from the beginning. Of these, the following is an abridgment:—

The subject was a boy, who was weaned at eleven months old, in the end of July 1824. On the fifth day thereafter he was seized with a diarrhoea. The stools were at first copious, of a green colour, and slimy consistence, and became more watery in the course of the next two days. On the third day of this disease, vomiting came on, with great thirst, and these symptoms continued to distress him till the time when I first saw him, which was on the sixth day. At this time I remarked great emaciation of the limbs. The mother informed me that he had been very thin for some time before his illness, but that he had lost much flesh since its commencement. His countenance was expressive of much anxiety; his pulse was 120; his skin a little hotter than natural; I saw him drink with great avidity; he seemed incapable of being amused, and was often drowsy. The diarrhoea had abated, and the feces were nearly natural in colour.

As the emaciated state of this child appeared to me to contraindicate depletion, I rested my hope of cure on such means as I judged to be calculated to subdue irritation, and produce a quiescent state of the alimentary canal, and especially of the *primæ viæ*. Accordingly, I resolved that the ingesta should be all of the mildest sort, and that both food and drink should be given only in small quantities, and at considerable intervals. With the same view, I resolved to avoid giving medicines by the mouth altogether. I divided the gums over the two middle incisors in the upper jaw, which appeared then to be approaching, and which became visible two days after; and I gave orders that he should receive only half a wine-glassful of arrow root every six hours.

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[*] See Edinburgh Medico-Chirurgical Transactions, vol. i. p. 311. This important paper, which we designed to have prefixed to the present, but find ourselves restrained by want of room, is entitled, "Cases of Infantile Disease, in which erosions and perforations of the alimentary canal were found after death, with remarks." We shall deliver, at the end, however, a specimen of the tabular view, which Dr Gairdner has drawn up, of the cases from which his conclusions have been deduced.—EDIT.

The following day the vomiting was gone, and the thirst, diarrhoea, and heat of skin, much abated: the feet were coldish, and the child was much disposed to sleep. The regimen was ordered to be continued, and the warm bath to be used, if the heat should return.

Next day (the 8th), the thirst and heat of skin were gone, and the warm bath had therefore not been used. No vomiting; drowsiness decreased; he looks better, and has taken and retained a larger meal than usual this morning. I strongly enjoined that no farther increase of his ingesta should take place for the present.

On the ninth day expression of countenance better; all the morbid symptoms gone. Pulse, heat, and evacuations natural; he took arrow root four times in twenty-four hours, and retained it.

I began to have some hope of a cure; but, on the following morning, he had three darkish stools, fetid, copious, and rather solid, with some griping. This was the beginning of a diarrhoea, which was never afterwards thoroughly arrested. By the fifteenth day it had increased to six stools in twenty-four hours; by the twentieth to ten, which was its maximum. After this it yielded a little, but again increased, and underwent several changes in the degree of its severity, till the thirtieth day of the disease, when the child died. During this period he had vomited only once or twice; but he lost all appetite, had great thirst, and was so restless and fretful, that nothing could amuse him even for an instant. Paleness and occasional coldness of the extremities, and a feeble pulse, indicated from day to day an increasing languor of the circulation. His emaciation also was progressive, and latterly extreme. Attempts were made to restrain the bowel complaint by opiate injections, and afterwards by a cretaceous mixture, containing opium. Strong beef-tea was thrown into the rectum, along with the opium, to convey nutrition. The warm-bath was employed to equalize the heat of the body, the large intestines were frequently washed out with plentiful injections of warm aqueous fluids. The several means served no other purpose than that of procuring some temporary abatement of the symptoms.

Dissection fifty hours after death.—The intestines were thin, and more than commonly translucent, and contained much air, but very little solid or fluid matter. At two points in the course of the jejunum and ileum, a very small quantity of fecal matter was observed, which had communicated its deep yellow hue to the intestine at these points by transudation. There was a moderate quantity of bile in the gall-bladder. The mesenteric glands were sound; and so were all the viscera of the thorax and abdomen, with the single exception of the stomach. On examining its splenic extremity, I observed, that, although apparently entire, it had at one part a semi-transparency and bluishness, which I knew proceeded from disorganization of its texture, proceeding from within outwards. This external appearance might easily have been overlooked by me, if I had not been taught to expect it by the previous observation of similar cases; and I cannot account for the paucity of such observations in the records of our profession, otherwise than by supposing that it has often been overlooked. On examining the stomach from the inside, I found all its coats perforated, except the peritoneal, which was so attenuated at that part, that nothing remained of it but the most external layer; the texture of which was so much injured, that it gave way under the pressure of a few drachms of fluid, which I had introduced with the greatest caution, for the purpose of washing the mucous from the villous coat. The stomach contained only a small quantity of thickish opaque fluid.

I have presented, in my former paper,* a tabular view of a number of facts, from which I am disposed to infer, that this species of atrophy is frequently excited by the change of food at weaning. I find, from the cases I have collected, that those which occurred in the course of the first two months after weaning, are to those which occurred either prior to weaning or at a considerable distance of time after it, in the proportion of two to one. There is, therefore, strong reason to suspect the change of food to be one exciting cause; and as the disease is so intractable when once established, the choice of a proper time for taking the child from the breast is a matter of great consequence. In determining it, the following circumstances ought, in my opinion, to be attended to:—

1. *The condition of the patient.*—If it has been liable to

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* In the first of the two Tables which it contains.

diarrhoea, or is a feeble child, emaciated by previous illness, weaning ought, if possible, to be avoided. If diarrhoea is actually present, the child should not, on any account, be weaned.

2. *The season of the year.*—The disease seems to be most apt to happen in the hot weather of summer and autumn. In this the experience of Cruveilhier, and, I think, of Jaeger also, agrees with mine. Mr Burns states, that the four instances of disorganization of the stomach of infants which he found in the dissecting-room, and of whose history during life he was ignorant, were all in the summer season. Dr Cheyne, whose cases of atrophia ablactatorum closely resemble mine in many of their characters during life (though he does not appear to have detected the same appearances after death), expressly states, that "the disease chiefly arises in the autumn *." I do not find that any cases similar to that described above have ever occurred in winter.

3. *The sex of the patient.*—From the above case, and those registered in the table already referred to, it would appear that boys are more prone to the disease in question than girls. In some of the cases the sex has not been noted, but of eighteen in which it is noted, fourteen were boys, and four girls.

In regard to the theory of this remarkable species of disorganization, I am still of opinion, that whatever the changes may be which occur during life, the destruction of the substance of the stomach occurs after death, by the action of the fluids within it upon its texture. This opinion receives strong confirmation from the appearances which presented themselves in the stomach of a girl, six years of age, who died at Paris, in the Hôpital des Enfans Malades. I am indebted to my friend Dr Thomson for the following description of the appearances, as they had been communicated to him, along with a delineation by Mr Carswell:—"A considerable portion of the mucous membrane of the stomach was converted into a soft pulpy substance. On laying open the stomach, a portion of its great curvature, near the fundus, was of a pale-bluish colour, and was found to be deprived of its mucous membrane. From this part, a number of stripes, of the same colour, were seen spreading out in different directions, which, when examined, were found to be so many plicæ, likewise deprived of the mucous membrane. The pale-blue colour was evidently owing to the submucous or cellular tissue being exposed, by the destruction of the mucous membrane. The softened and separated mucous membrane was found lying in a heap towards the fundus, in a gelatinous state; and, when the surface of the mucous membrane, which yet adhered, was slightly scraped with the back of a scalpel, it was detached in a gelatinous state with the utmost facility, particularly where it covered the plicae, situated near the fundus and great curvature. The mucous membrane was nowhere vascular, but around the softened portion, was, in some places, of a greyish-brown colour, such as is occasionally found in some cases of chronic inflammation of this membrane."

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* Vol. i. Essay ii. p. 29.

In examining the stomachs of rabbits, I have different times observed this appearance of erosion of the inner coat following the course of the plicae. I have also observed it, in a certain degree, in the human stomach, but never so remarkable as in the delineation in Dr Thomson's possession: and, as an identity of appearance must be held to imply an identity of cause, I do not see how we can escape from the conclusion, that not a fibre was destroyed till after the death of the individual. But this does not in the least exclude the hypothesis, that the disease might have so changed the juices of the stomach, or its texture, during life, as to have rendered the solvent power of the former more active, or to have caused the latter to be more prone to undergo solution, after death had destroyed its power of resisting that process.

For the most recent information regarding destruction and disorganization of the mucous membrane of the stomach, I refer the reader to a paper by M. Louis, published in May 1824, in the fifth volume of the Archives Générales de Medecine; also to the Recherches sur la Phthisie, published in 1825, by the same author, p. 68, *et seq.* In p. 78, will be found some very remarkable results. Of ninety-six cases of phthisis examined by the author, seventy-seven had the mucous membrane of the stomach in an unsound state; and the details shew, that a large proportion of these resembled the first and fourth cases detailed in my former paper, both in the nature of the disease, which proved fatal, and in the character of the lesion of the mucous membrane.

Note by the Editors.—The diseases of mucous membrane, perhaps from the circumstance of their being for the most part subjected to the influence of extraneous matter, constitute the most difficult, and, from their number, the most important study of the practitioner. We had ourselves once occasion to witness a case of the kind here described, in the only son of an eminent physician, where the true state of the case was not suspected; and we believe that, generally speaking, of all the melancholy truths which pathological anatomy has, of late, added to our knowledge, there is none which is more foreign to our theoretical views of the vitality of the tissues, or less likely to be anticipated by the sagacity of the physician, than that before us, so demonstratively established by Dr Gairdner.

TABLE,

ntaining the circumstances of the first 6 of 21 primary cases of Softened Alimentary Canal, given in former paper.

No.	Age.	Sex.	Whether the disease began after or before weaning, and if after, how long.	Duration from beginning of the symptoms till death.	Duration from the commencement of the acute symptoms, and especially of vomiting, till death.	Authority on which the case rests.	Appearances on Dissection; with other Remarks of a Miscellaneous nature.
1.	9 m. 24 d.	Male.	2 days.	7 days.	3 days nearly.	The Author; see Trans. i. p. 314.	Fatal; no dissection.
2.	11 mos.	Male.	Same day.	17 days.	7 days.	The Author; see Trans. i. p. 316.	Perforation of stomach in four contiguous spots; no other morbid appearance.
3.	11 mos.	Female.	Not noticed.	1 month.	Not noted.	Cruveilhier's 1st case; the 5th stated in my paper; see p. 325.	Gelatinous state of the splenic end of the stomach, and of a considerable part of the small intestine. Eruption on internal surface of the great intestine.
4.	11 mos.	Male.	2 months.	13 days.	3 days.	Cruveilhier's 2d case.	Gelatinous state of the splenic extremity of the stomach, and of several inches of the small intestine.
5.	12½ mos.	Female.	2 weeks.	6 weeks.	6 days.	Cruveilhier's 3d case.	Splenic extremity of stomach gelatinous. Small gut full of fluid. On its inner surface were a number of dense, whitish, elliptical spots. Its internal membrane was easily separated, except in the situation of these spots, where it adhered very strongly.
6.	2½ years.	Male.	15 months.	32 days.	12 days.	Cruveilhier's 4th case. See some particulars of it at p. 330.	The three internal coats of stomach at its splenic end gelatinous. A large portion of great intestine in a similar state, which was perforated in two places; partial effusion of its contents. Intestinal eruption, as in No. 3. and dense spots as in No. 5.

* Dr Gairdner, in the Transactions, follows up these cases, by a Table of 23 others, which were complicated with general disease.

Case of Vicarious Menstruation, with singular discharge from the Ear, with Remarks. By THOMAS BARNES, M. D. Physician to the Fever Hospital and Public Dispensary, Carlisle, &c. Communicated by BENJAMIN BELL, Esq.

ONE of the most singular affections to which the animal economy is liable, is vicarious discharge. About six years ago, I met with the following case of vicarious menstruation, and have since had the patient occasionally under my care.

A young lady, who is at present about thirty years of age, was, during her childhood, subject to catarrhal complaints, hoarseness, and sometimes total loss of voice. When fourteen years old, menstruation commenced, but did not return at regular periods; she had 'generally an interval of three, or from three to six weeks, and always menstruated with pain and difficulty.

In the beginning of the year 1815, when nineteen years of age, she was affected with hemoptysis. She spit up a considerable quantity of blood; had a short cough; quick pulse; and other symptoms that threatened pulmonary consumption. Blood was taken from her arm, blisters were applied to the chest, and saline medicines given. In addition to these remedies, digitalis was administered, and she was gradually recovering, when symptoms of hepatitis occurred. There was a severe pain, with some tumefaction, in the situation of the liver, and a quick and strong pulse. Bloodletting, blistering, and mercury, were had recourse to, and the complaint was subdued, but she continued in a weak state of health two years, complaining of pain in the hepatic region, difficulty of breathing, frequent palpitations of the heart, bad appetite, and great thirst. During the first six months of this illness, she only menstruated three or four times; and afterwards, total suppression of the catamenia followed. She had never any leucorrheal discharge.

When twenty-one years old, this lady was seized with hemorrhage by the mouth, while walking gently: blood was brought up in large quantities for two or three days, and continued more or less near ten days. She had at the same time difficult respiration, cough, a quick and strong pulse, and other symptoms of hemoptysis. This attack happened in the summer of 1816, and was attributed to her casting a flannel waistcoat. Blood was abstracted from the arm several times, and she took digitalis.

Eight months after the first hemorrhage, a second took place, and the interval afterwards gradually diminished. From 1817 to 1820, six, eight, or ten weeks usually elapsed between the returns of the hemorrhage. Before it took place she felt a tightness across the chest, a heavy weight in the region of the heart, considerable pain in the left hypochondrium, and had much difficulty of breathing, but no cough. Blood was taken from her arm, each time, to the amount of ten ounces, but no relief was obtained until the hemorrhage from the lungs took place. If at any time the bleeding from the arm was delayed, she became threatened with suffocation. The quantity of blood brought up by the mouth was from twelve to twenty-four ounces, and was generally rejected at four, or from four to eight, or ten times. It was chiefly of a florid red colour; some of it was rather dark. There were usually about ten ounces of blood taken from the arm; if less were abstracted, no relief was procured until the vein was again opened. Dr Scott, her regular medical attendant, to whom I am chiefly indebted for the above account of this singular case, tells me he has often witnessed the hemorrhage, that it was brought up with little exertion, and he believes it came from the lungs.

In December 1818, in order to prevent the pulmonic hemorrhage, a larger quantity of blood than usual was drawn from the arm, but it had not the desired effect. The hemorrhage came on, continued near two days, and amounted to about thirty-six ounces. This was succeeded by great debility and general anasarca, of nearly two months' duration. Thirteen weeks elapsed before she had another hemorrhage; afterwards six or eight weeks generally intervened. This lady was always much afflicted with muscular pains of her head and left side, for about a fortnight after an attack. She then recovered so far as to walk about the house, and, in fine weather, was able to walk a little in the garden.

In June 1820, the patient was put under my care, and, at that time, a very extraordinary change had occurred in her complaint. About ten days before I saw her, and three weeks after the last pulmonic hemorrhage, in which nothing more than usual had happened, she was seized suddenly, at three o'clock in the morning, with an excruciating pain in her head, affecting chiefly the right side. She sprang out of bed, and laid her head in her sister's lap; a discharge of water took place from the right ear, and continued eight or ten minutes. The discharge returned every eight or twelve hours for ten days, and was attended with violent pain, which did not go off until three or four hours afterwards. The quantity of water was so great as to wet thoroughly from three to five common sized silk handkerchiefs each time. It was colourless, and had neither taste nor smell. The ear was dry in the interval. About a teacupful of fluid was supposed to be discharged each time. An universal coldness pervaded the surface of the body at the time of the discharge; and she complained much of coldness of the fluid. At my first visit, June 14. 1820, she appeared much emaciated, pallid, and feeble; her pulse was 100; her bowels open; she had great pain in her head, much thirst, and no appetite. I ordered her an antispasmodic medicine, composed of tincturae valerianae ammoniatae, and spiritus aetheris nitrici; the pediluvium; and a blister to the inside of the legs. Her head had been shaved, and I directed a lotion, consisting of tincture of opium and camphorated spirit of wine, to be applied to it. She had been accustomed to take large quantities of tincture of opium, for which tincture of henbane was to be substituted. These remedies produced little effect.

I saw her again on the 19th; she had then longer intervals, and the discharge was less in quality. At my request some of the fluid had been collected. I was told by the attendants that they had much difficulty in collecting it, on account of the patient's great suffering. Such was her agony that she required two persons to hold her, and she felt most relief by folded handkerchiefs being pressed firmly against the ear. The handkerchiefs were soon wetted through, and the discharge was squeezed out of them. The following chemical tests were applied to it: Heat produced small coagula; alcohol, and a solution of oxymuriate of mercury, a small white precipitate; solution of galls a precipitate of a little darker colour. At this visit, she was ordered extracti belladonnae gr. iv. every three hours. After she had taken five doses, she complained of pain in her stomach, giddiness, and dimness of sight. The belladonna was intermitted a few hours, and the pain in her stomach ceased. She afterwards took gr. ij. of the extract every three hours, but with very little relief. Five leeches were twice applied to the temples and forehead, but without any apparent advantage. As she complained of pain in the lower part of the spine, and a month had elapsed since the last pulmonic hemorrhage, I directed her, but without much expectation of benefit, to sit twice a day upon the steam of hot water, and take tincturae hellebori nigri ʒi. with tincturae lyttae gtt. xx, three times a day. This plan of treatment had no good effect, and was therefore discontinued. For several days she took no other support than a little very weak sherry and water. Afterwards the wine was omitted, and she took a single cup of coffee, and occasionally drank a little toast water; she had considerable thirst, but no appetite.

24th.—I visited her again, and was told that the pain of her head had been constant, but not quite so severe. The paroxysms of pain accompanied with the discharge were not regular in their return, nor did an increase of pain always precede the discharge. A few days before, the paroxysms had returned once in twenty-four hours, and afterwards twice in seventy-two hours. Twenty-four hours had intervened between the last two paroxysms. The discharge had taken place three times during sleep; and was immediately followed by an increase of pain. She had a paroxysm of pain when I was present, and I tried a variety of means to relieve her. I waited, in the *first* place, about an hour, in hopes that I might see the discharge taking place. Three tea-spoonfuls of the tinctura hyoscyami nigri were then given, and a cold lotion of vinegar and water was constantly applied to the head. Five leeches were applied to the temples and forehead; pressure was made on one, and afterwards on both, carotid arteries. The head was rubbed with tincture of opium and brandy. She took two teaspoonfuls of laudanum, and one of tincture of henbane, and also gr. iv. of extract of belladonna. But all were used without any relief. The pain was so severe, and her agony so great, that she could be heard calling out at a considerable distance; her face was frequently much distorted; her pupils were dilated, and she had great intolerance of light. I left her, at the end of three hours, when the pain continued, but there had been no evacuation of liquid from the ear. The interval between the paroxysms of pain in her head, and of the discharge from her ear, afterwards became longer. She had not a paroxysm for several days.

July 9th.—At this visit, I was informed that the pain of her head, and the discharge from her ear, had taken place three times within forty-eight hours. She complained of a sense of weight and fulness in her left side, difficult breathing, so difficult as to be obliged to sit constantly erect, a troublesome cough without expectoration, and occasionally stitches in her chest, which symptoms have generally preceded the pulmonic hemorrhage; the pulse was 120, and bowels were open. Eight ounces of blood were taken from a vein of the ancle, a pediluvium, and frictions of the lower extremities made use of. She passed a better night; respiration became easier, and she continued better the following day. Two dozen leeches were procured, and ordered to be applied to the groins, if the symptoms returned.

11*th.*—The symptoms have returned; and, from some unaccountable cause, very few leeches would bite. Four ounces of blood were therefore taken from the leg, sinapisms were directed to be applied to the loins every night, and if too much soreness should be produced by them, they were to be applied alternately to the loins, inside of the thighs, and calf of the legs. She was ordered to take ℨi of rubia tinctorum three times a day. The pain which affected the top and right side of the head left these places, and attacked the forehead, where it remained a short time, and again returned to its original seat. She is occasionally tormented with toothache, and has several decayed teeth, in consequence of which she is recommended to have them extracted. Venesection of the ancle was repeated several times, and always with alleviation of the pulmonic symptoms. By persevering in this plan, the hemorrhage from the lungs was prevented. She continued subject to severe paroxysms of pain in her head many weeks, and they were generally accompanied with a discharge from the ear. They became less frequent, and gradually left her.

Since then she has sometimes had very bad headaches, but never the excruciating pain she suffered in a paroxysm, nor has there been any watery discharge from the ear. She has occasionally been subject to cramp of the stomach, which generally yielded to a full dose of laudanum. Sometimes her stomach has been very irritable, and rejected every thing she took. This affection was removed by taking effervescing draughts, and applying leeches to the epigastrium. Her bowels have been sometimes constipated, and required the strongest purgatives. At other times, the reverse had happened: a diarrhea has come on, and strong astringents have been found necessary to restrain it. Dysuria has occurred several times. At one time she had great anasarca of the lower extremities, and apparently ascites, which were removed by diuretics. She has been very often subject to spasmodic pains of the right side, and also of both the upper and lower extremities, which have generally increased after bloodletting. No hemorrhage has taken place from the lungs within the last six years, but the sense of fulness in the chest has continued to return periodically, and has always been removed by opening a vein in the foot. The symptoms are nearly similar to those which preceded the pulmonic hemorrhages: great difficulty of breathing; tightness across the chest; pain in the right side, pulse full and frequent. These symptoms uniformly increase until blood is abstracted from the foot. Eight ounces are generally taken away at a time. The pain is relieved; the breathing becomes easier, and the pulse softer and less frequent: but the symptoms are seldom removed by fewer than three or four bleedings, which are usually required every third or fourth day. The interval between the returns of fulness of the chest has been the same since 1820, as before. Six, eight, or ten weeks usually elapse. She has better health in the intervals, suffers less during the attacks, and regains her strength much sooner after the bleedings from the foot, than she did after the pulmonic hemorrhages. About twelve months ago, an issue was opened in her leg, and has been kept discharging since. This, she thinks, has been of great service in preventing the headaches, and spasmodic pains of her extremities.

Remarks.—The parents of this young lady being in good circumstances, and anxious for their daughter's recovery, consulted several medical gentlemen respecting her. At an early period of her illness, she was attended by two skilful and experienced physicians of this city. She also received the advice of a physician of eminence in London, who saw her several times at the commencement, and during the early part of her complaint. A near relation of her's, who was studying medicine in Edinburgh in 1820, at my request consulted several professors of medicine in the University, and also some private practitioners of acknowledged learning and judgment. The opinions given by them, and the modes of treatment they recommended, agreed in many respects. Not having any written opinions from them, and not knowing their sentiments, as to whether they would wish them to be made public or not, I cannot with propriety or justice mention their names, and their several opinions and plans of treatment. A professor, who deservedly stood long at the head of the profession in Scotland, and is now no more, was one of the gentlemen consulted. A statement of the patient's case was left at his house by her relation, who called a few days afterwards, and introduced himself by alluding to the case. The Doctor immediately interrupted him in his usual rough manner, saying, it was a long winded story, and a hopeless case. An attempt, he said, might be made to restore the functions of the uterus, by the pediluvium, and keeping the bowels lax with gr. x or gr. xv. of the pilulae aloes cum myrrha. He had no faith in the supposed virtues of the medicines classed under the denomination of emmenagogues. He had nothing to suggest in addition to the treatment already pursued during the paroxysm. With respect to the nature of the affection of the head, he confessed he knew nothing; and had never met with any thing similar.

There can be no doubt I think, that the blood evacuated by the mouth proceeded from the lungs, and was vicarious of menstruation. It came on after the menses had been suppressed, and returned at stated periods. The hemoptysis which occurred two years before, was probably the predisposing cause of its taking place from the lungs. The vessels of the lungs having been weakened by the hemorrhage, were more susceptible of a new action, and accepted more readily, than the vessels of any other part, the action of the uterus. A change of the situation and also of the action were the result. A cessation of the menstrual discharge from the uterus having taken place, and the constitution, at this time of life, requiring a periodical evacuation, a new action is produced in the lungs, and a new discharge, somewhat similar to that from the uterus, is substituted, and returns periodically. Before actual suppression took place, the catamenia were excreted with pain and difficulty, indicating that the extreme vessels of the uterus did not perform their function properly, and hence were more liable to obstruction, and hence also, probably, the great difficulty of reestablishing the menstrual discharge.

It is not so easy to account satisfactorily for the colourless discharge from the ear. It might be a secretion from the external meatus auditorius, and if so, is a very curious instance of the numerous and no less various vicarious discharges consequent on suppression of the menses. The discharge might also proceed through the petrous portion of the temporal bone, and issue from the vessels of the brain, but as the hearing of that side was not affected, and as we were not able to discover any organic change in the ear, the former seems the more probable explanation. There is a third way in which this very singular symptom may be explained. It sometimes happens, that patients themselves, as well as their attendants, are deceived. Though I would have as much confidence in this young lady, and her attendants, as in any lady labouring under a similar affection, and in attendants placed under similar circumstances, and though I would not impeach their veracity, yet I might doubt their accuracy. The liquor secreted by the salivary glands is liable to be suddenly augmented. The mechanical pressure made use of would increase it, and if it run out of the mouth towards the ear, when the patient was in extreme suffering, and in a state of mind bordering on delirium, she might be induced to believe it proceeded from the ear. The analysis shows that it had considerable resemblance to saliva. A medical friend, who is rather sceptical, has favoured me with another explanation. He says, when he meets with any extraordinary occurrence, that seems almost incredible, he receives it cum grano salis. He suspects that the patient deceived her attendants, that she had water or some other liquid secretly conveyed to her, and by legerdemain, made them believe it came from the ear. This seems very improbable, as there was no ostensible reason for deception; the medical gentleman who was sometimes present, and the attendants, could not be easily deceived; and the evidence were afterwards very closely scrutinized *. I can-

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* On considering this interesting case, we are inclined to think that there are no solid grounds for supposing that either the patient or her attendants were deceived. A case almost in every respect similar, is recorded in the *Ephemerides Naturæ Curiosorum*, in which *otorrhoea serosa*, or serous discharge from the ear, alternated with the menstrual and hemorrhoidal discharges, to which the individual was subject, for a much longer period than the present. Sauvages, ii. 413, makes two species of Otorrhea, O. serosa, and O. purulenta, of which he considers the serosa to be the most frequent; and adds, with regard to its vicarious nature, "Ea vero humiditas excrementitia locum tenet vesicatorii, caput, oculos, faciem, ab aliis incommodis liberat; hac (O. pone aures describebat) repressa, accidit, ut vel fluxus ex aure interna

didly confess, that I have not been able to satisfy my own mind, neither as to the nature of the fluid, nor as to the place from which it proceeded. I never witnessed the discharge taking

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etiam procedat, aut ophthalmia infestat. Uberrimam otorrhoeam serosam, ex ictu, vide *in Ephemerid. Nat. Cur. dec. ii. Ann.* 6. *Obs.* 12." The venerable Portal, in his Anatomie Medicale, vol. iv. p. 452, observes, when speaking of the different discharges which take place from the ear, "On en a vue des ecoulemens sereux si abondans, et pendant plusieurs jours, quils trempoient plusieurs grandes linges; souvent l'ouie alors n'est vicieé nullement."

The following case of vicarious otorrhoea serosa, occurred in our own family, and we owe it to the zeal of our amiable and learned friend Dr James Russel *junior*, of this city, that it was put upon record at the time it occurred, (July 1823), in his valuable inaugural dissertation De Otorrhoea, to which the reader, who is curious in respect of this rare affection, may refer with advantage. Compare Buchanan, Acoust. Surg. p. 79.

"A maid servant, aged 23 years, had suffered two or three attacks of hysteria; of a habit rather sanguine, somewhat full, and indicating the strumous diathesis; was dyspeptic, with frequent nausea, and unaccountably annoyed with repeated attacks of chronick ophthalmia. With the intention of removing the dyspepsia, and tendency to ophthalmia, she bathed two or three times in the sea at Newhaven. Of a sudden, an eruption, to which she had never before been subject, broke out about, but not in, the ears, with a copious discharge, (this we *saw*, many times a-day), from the meatus externus, of a pellucid, colourless, inodorous fluid, but so acrid that it excited pustules and scabs over all the parts of the cheek and neck upon which it flowed. This state of the ear was accompanied with intense itching, which was relieved by dropping in a watery solution of opium, though the latter seemed to increase the acrimony of the discharge. A solution of acetate of lead applied, easily cured the pustules, which, in all probability, had been excited by the acrid fluid discharged alone, and also suppressed the discharge. But the ophthalmia immediately returned, till, on the discharge being restored, it again disappeared, and so on alternately, for three or four times."

It is to be observed, however, that the discharge of otorrhea serosa is not always of the same nature, but, like other secretions, is modified by the existing disease, or irritation, of its source, the *glandulæ ceruminosæ.* Though the discharge in the case so ably related by Dr Barnes, is described as having the same sensible qualities as that we have commemorated above, yet it did not irritate the skin, as must infallibly, and almost instantaneously, have happened, had it been nearly as acrid as that which we witnessed. M. Itard, in his excellent *Traité des Maladies de l'Oreille, et de l'Audition*, considers, and properly, the discharge which we have hitherto, after Sauvages, named *serous*, as of the mucous kind; and states, that he has seen this increased mucous secretion degenerate into suppuration. Sauvages, in the same place, and from the authority there already cited, describes a "liquor croceus," that "In viro, quotis mensibus, effluere solebat, non sine fetore;" and this species he chuses to denominate, *Otorrhoea menstrua.* With the same profusion of nomenclature, that which we have described, might be named, *Otorrhoea scabiosa.* We, as well as the publick, owe our best thanks to Dr Barnes, for frankly stating the difficulties which all must feel in explaining this singular example of vicarious discharge. It is true, that the sebaceous glands of the skin, the labial glands of the lips, the mucous glands of the alimentary canal, the meibomian, the odoriferous, and the ceruminous glands of the ear, are all to be considered as the same organs, in different degrees of modification adapted to the tissues they lubricate; and that it is probable they all sympathise strongly with each other, with the uterus, and perhaps with some other viscera; but the conversion of a thick, tenacious, and almost resinous secretion, like the cerumen, into a *transparent, tasteless, colourless, inodo-* *ous* product, is one of the most curious, and inexplicable incidents in the his- of secretion.—EDIT.

place. The analysis, though imperfect, certainly shews that it was not common water. The above opinions can only be considered as conjectural or hypothetical, and the case is published with the view of eliciting the opinion of others, and of obtaining truth. If other practitioners have met with similar cases, it would give me great pleasure to be informed of them. Hitherto I have not been able to learn that a similar case had occurred to any author or practitioner I have consulted: my opportunities, however, have been very limited.

The principal object in the treatment of this case, was to improve and restore the function of the uterus, by producing an increased determination of blood to the lower part of the body, at the same time endeavouring to strengthen the system generally. With this view, frictions of the lower extremities, pediluvium, sinapisms to the loins, aloëtic and other stimulating purgatives, rubia tinctorum, blisters to the legs, &c. were employed. Instead of abstracting blood from the arm, I requested, that, as soon as symptoms indicating an approaching hemorrhage from the lungs appeared, blood should be taken from the ankle, and that leeches should also be applied to the groins; on the principle, that, from whatever part you abstract blood, there is afterwards a greater influx of blood to that part. Narcotics, antispasmodics, and leeches to the head, were used as palliatives, during the paroxysms Tonics were given to invigorate the digestive organs, to improve the health, and restore the strength of the patient.

The practice of abstracting blood from the lower extremities, in cases of suppressed menstruation, is of very ancient date. It was recommended by Galen, and the older practitioners, and is, I think, too much neglected in modern times. It appears to me highly probable, that, generally speaking, from whatever part of the body blood is abstracted, an increased determination afterwards takes place to that part. Galen observes, (De Curandi Ratione per Venaesectionem), that "as for fulnesses arising from suppressed menses, you must evacuate them solely by the legs, whether it is done by opening a vein, or by scarifications; for, in women, bleeding at the arm usually diverts the menstrual courses." Oribasius also remarks, when speaking of scarifications in suppressed menses, (De Cucurbitula, Scarificatione, Hirudinibus, &c.), "with some particular women this remedy will greatly contribute to make the menstrual purgations return in their usual manner; for drawing down the blood continually towards the lower extremities, gives it a tendency and opportunity to come that way." Van Swieten and others are also strong advocates for this practice. Pinel (Nosographie Philosophique), Capuron (Maladies des Femmes), and many other continental practitioners of the present day, recommend leeches to be applied to the vulva, in preference to bleeding from the foot, as a remedy that is more frequently attended with success. This mode of treatment, from motives of delicacy, is seldom adopted in British practice. In the case just related, so long as blood was taken from the arm, the hemorrhage from the lungs continued, but ceased as soon as it was abstracted from the ankles, and has not returned since. When the patient was bled at the arm, no relief to the sense of suffocation, and the other distressing symptoms, was obtained, nor did the pulmonic hemorrhage take place, until a certain quantity of blood had been abstracted, which may be accounted for on the principle, that bleeding takes off the force of the circulation, arising from too much blood, and assists the dilatation of the vessels. It is a fact well known, that bloodletting often accelerates the menstrual discharge. Hoffman affirms, from repeated experience, (Med. Rat. et Syst.), that "it is a common thing to see letting of blood, before the usual period, occasion a freer discharge of the menstrual flux."

Physicians, from the time of Hippocrates downwards, have related cases, in which the menses were obstructed, and the blood made an outlet, by uncommon and surprising passages, in different parts of the body, such as the nostrils, gums, eyes, ears, esophagus, lungs, stomach, intestines, skin, breasts, bladder, wounds, ulcers, &c. When the evacuation was from the lungs, it was considered highly dangerous. Hippocrates observes, (De Morbor. Mulier.), that, "in some women, when the menstrual blood has been stored up and intercepted in the uterus for two months together, it is at last carried to the lungs; all things that are said to happen in a consumption befal these women, nor are they ever able to survive it." The case before related shews that this event does not always happen. The patient is still living, and has no symptoms of pulmonary consumption. A case, somewhat similar, is given by Hoffman, (Med. Ration. et System.) of a lady, who had a great fright at the time of her menses, which were immediately suppressed; on which there followed an oppression of the breast, anxiety of the precordia, and a violent palpitation of the heart: the next month the menses appeared in a very small quantity; but an hemoptysis, preceded by the above symptoms, came on, which ceased after four days. This hemoptysis returned every month for nine years successively; but so as to intermit in time of pregnancy, returning after delivery, and preserving its usual periods while she suckled her children; her health all the time being not in the least affected by it. Bonetus also states, (Tabid. Theat.) that he met with cases of vicarious discharge from the lungs, which were not attended with danger, and in which the health was very little injured. He asserts, that an evacuation of blood from the lungs, in cases of this kind, is very often a safe and successful relief to the whole body. The vessels of the lungs, probably, take on this new action, without any diseased alteration of structure, and, except there be a predisposition to phthisis in the constitution of the patient, the disease is not excited.

CARLISLE,
July 10*th* 1826.

Outlines of a Case of Encysted Abdominal Dropsy from diseased Ovaria, complicated with Pregnancy. By JOHN KESSON, Surgeon, North Berwick. Communicated by BENJAMIN BELL, Esq.

MRS A. aged 40, a stout robust woman, the mother of three children, consulted me 11th July 1825. She stated, that, on the 15th January preceding, she had a miscarriage, the third she had suffered, at the end of the third month. Being from home, and not properly attended to, she caught cold, which confined her to bed for some twelve or fourteen days. Soon after this she became sensible of a fulness of abdomen, which continued gradually to increase; and as she supposed herself pregnant, even though the catamenia appeared regularly, she did not apply for medical aid, till, on mentioning this circumstance to a female friend, she took the alarm on being told it was impossible she could be with child; and, in consequence of this, consulted me at the time above stated.

She was then the size of a woman between the fifth and sixth months of pregnancy. Her countenance was sallow; urine scanty; bowels costive; she complained of shooting pains in the left side; but her general health was not affected. She had menstruated a fortnight before.

The integuments of the abdomen became more and more distended, and about the 1st of October she became so unwieldy that I proposed drawing off the water. This I did on the 9th October, assisted by my much respected friend, Dr Macwhirter. *Thirteen quarts* and *a half* of fluid were drawn off. She bore the operation well, recovered rapidly, and in a short time was able to do the duties of the house.

She continued to suffer occasionally a good deal from pain in the left side, and in a few weeks afterwards it was evident the fluid was again collecting. By the latter end of January 1826, she was as big as before.

At my visit on the 30th of the same month, she said, that, for a considerable time, she had felt something like the motion of a child, which, from the anasarcous state of the abdomen, it was impossible for me to ascertain; the lower extremities were very much swelled, and in one of the feet the integuments gave way, and a quantity of water oozed out.

I should have mentioned, that the catamenia never returned after the period in June noticed before.

From what she said respecting the motion of a child, and other circumstances, leading me to think that there might possibly be a child in the case, I was anxious to have a consultation, and, on the 5th February, Dr Macwhirter had the kindness again to meet me. Six days afterwards, the 11th, I was sent for, and arrived at her house, two miles distant, only in time to extract the placenta of a fœtus of seven months; the the child was small, but alive and well; and it continued to thrive, though it received a little milk for the first fortnight only, from a sister of the mother, till it was nearly four months old, when it died from the effects of cold. After delivery, the abdomen was very little reduced in size, the integuments were still on the stretch, and a little relaxation only was observed over the epigastrium.

Mrs A. did well until the 21st, when she complained of general pain throughout the bowels, short breathing, troublesome cough, with inability to lie on the left side; she had hiccup, pulse as high as 145, regular fever, and vomiting of that coffee coloured fluid so marked in puerperal fever. On the 27th I thought her dying. Yet she struggled through, and in a few weeks was so far recovered as to be able to move about. The swelling had somewhat subsided, and the anasarcous state of the legs was greatly better.

On the 16th June I was again requested to visit her; found her bigger than ever she had been, and she earnestly begged I would do something to relieve her. On the 19th she was again tapped, but only a quart of fluid, the colour of the darkest porter, flowed; from what cause the discharge was limited to so small a quantity, was at that time to me quite inexplicable. A probe introduced its whole length through the canula, and meeting with no resistance, satisfied me I was within the cavity of the abdomen. After this, her health gradually declined, and she died on the 29th.

Her dissection took place nine hours after death. The abdominal integuments being dissected back, a canula was introduced, and the water drawn off, which in all amounted to *thirty-six quarts*, accurately measured. On cutting into the abdomen, I lost myself in an immense sack; thinking I was within the *cavity* of the abdomen I looked in vain for the viscera. I thought for a moment, and lifting up the large bag, discovered the intestines lying huddled together, quite empty and much contracted. I regret I cannot convey in words the appearances observed inside of the sack; they were so peculiar as to baffle description. A great quantity of soft shreddy matter, the colour of prepared minced collops, adhered to the inside, and hung loose floating in the bag. The ovarium of the left side, considerably enlarged, was enveloped in a mass of hydatids, which, on being punctured, emitted a gelatinous fluid. The right ovarium was not so much enlarged as the left, but the mass was equally large, from the number of hydatids enveloping it. Having examined the contents of the sack, I proceeded to detach it from the peritoneum, which was easily done with my fingers all round, till reaching the broad ligaments of the uterus, where only the scalpel was necessary to detach it from its origin. It was lifted out entire, leaving the liver, the spleen, stomach, with intestines, and other viscera, quite healthy: the mesenteric glands only were a little enlarged. The size of the bag may be guessed at from the quantity of water it contained. The cause why so small a quantity of fluid flowed on the 19th, when she was tapped, now became evident. I had introduced the canula too low, and therefore had not punctured the sack, though it was fully an inch and a-half above the cicatrix of her former tapping.

In the chest there was an ounce or two of fluid collected in the left side; in the right there was none; but the lungs adhered firmly to the pleura costalis. The substance of the lungs and heart was quite sound.

The head was not examined.

There is one circumstance in the foregoing case which appears to me remarkable,—that abortion was not produced by the drawing off so large a quantity of water, when there appeared a predisposition in the system to effect that change, and especially, as the operation was performed about the period of pregnancy at which she used to abort. Immediately after she was tapped, too, digitalis was administered in full doses during the day, with the blue pill night and morning for some weeks, medicines certainly the most likely of any to excite abortion, yet the uterus retained its charge.

North Berwick,
9th August 1826.

Observations on the Nature, Causes and Treatment of Beriberi. By William Hamilton, Esq. Surgeon, H. E. I. C. S. Communicated by Mr J. F. Macfarlan.

This very singular disease, so far as I have been able to learn, appears to be principally, I may say almost entirely, confined to the Island of Ceylon, to the Malabar coast, and to that tract of country reaching from Madras as far north as Ganjam, in no part extending inland more than forty miles; forming what is called the northern division of the Madras settlement. It is most prevalent during the decline of one monsoon and setting in of another, when the atmosphere is completely loaded with cold, raw, damp vapours, and the vicissitudes of temperature are greater than at any other period of the year; and the instances are comparatively rare where it has been found to occur at a distance from the sea exceeding sixty or seventy miles. A residence for some time (generally some months) on a station where the disease prevails, seems essential for its production.

The first case that fell under my care, was one in which the disease appeared under its milder form. There was from the first slight dyspnea, with stiffness of the lower extremities; pulse quick and sharp; skin dry and rough. Supposing it only a slight feverish attack (the individual having been exposed the preceding night to cold damp winds), I prescribed a solution of tartar emetic, to be given in small repeated doses, for the purpose of acting on the stomach, bowels and skin; and directed that he should be kept warm, having very little doubt that, by next morning, I should find my patient much relieved. To my great mortification, however, I found all the symptoms much aggravated, particularly the stiffness in the thighs and legs, which now amounted to an almost complete paralysis. From this time there was no mistaking the nature of the complaint; and though I strictly followed the plan and treatment recommended by Dr Christie, and by him found so successful, the poor fellow died on the evening of the tenth day from the commencement of the attack, having for some days previously laboured under all the symptoms generally present in beriberi. From particular circumstances, there was no *post-mortem* examination.

In the second case which I had an opportunity of attending, the disease, from the time I first saw it, appeared under its most aggravating form; the symptoms were as follows: Great debility with difficulty of respiration, a sense of weight and oppression at the lower end of the sternum, and an almost paralytic state of the thighs and legs; which, soon after the commencement of the attack, became edematous, as did also the face, and indeed the greater part of the body, with a general sense of coldness over the surface; pulse 120, small, feeble, and intermitting. All these symptoms went on increasing until the death of the patient, which took place within forty-eight hours from the time that I first visited him. A short time previous to his death he was seized with a violent fit of vomiting, spasms of the abdominal muscles, and increased dyspnea, which carried him off.

Sectio Cadaveris.—Upon removing the skull-cap, I found upwards of an ounce of serum effused between the pia-mater and tunica arachnoidea; and in two or three different places there appeared dark-red coloured patches, one of which was exceedingly vascular, and extended into the substance of the brain, to the depth of from a quarter to half an inch. There was likewise found considerable effusion in all the ventricles, except the fourth. In the base of the cranium, upon the brain being removed, there appeared upwards of four ounces of fluid tinged with blood.

The lungs were very much loaded with dark-coloured blood, and in both cavities of the thorax there was found extensive effusion. The heart was of a healthy appearance, nor did the pericardium contain a much greater quantity of fluid than usual; both on its external surface, however, and internally, there existed very evident marks of inflammation. The diaphragm, particularly toward the right side, appeared considerably inflamed. The stomach was of a healthy appearance, and contained about six ounces of a dark-brown liquid.

The liver was very evidently larger than nature, and appeared even still more loaded than the lungs. On cutting through its substance, the blood from different points trickled out in a continued stream, and indeed all, even the most minute vessels, seemed completely gorged, as were also those of the mesentery and pancreas. In several places on the surface of the intestines there appeared a sort of efflorescence; but upon the whole they presented nothing remarkable. On examining the spinal-marrow, the same evident marks of congestion were found to exist, more particularly in the dorsal region. From three to four pounds of fluid were found in the cavity of the abdomen; and in the cellular texture, almost all over the body, there was very extensive effusion. No other deviation from the healthy appearance of the parts was found.

Dr Christie mentions, that, in many of the subjects he examined, who had fallen victims to this disease, there was found a remarkable obesity, even after a long continuance of the disease, and of the use of mercury, antimony, and other powerful medicines. This I certainly found to be the case in the individual whose body I examined; but he was naturally of a full habit of body, and in him the disease had not existed long.

Case. *November 17th, vespere.*—H. C. æt. 32, of a rather spare habit of body, says, that he has felt more or less indisposed for the last two days. Complains of very acute headache, with a sense of extreme debility, and severe dyspnea, which last came on suddenly; of great numbness, and a disagreeable prickling pain in his thighs and legs, which are much swelled and edematous; face and abdomen likewise considerably swelled; countenance extremely anxious; distressing sensation of extreme cold; much inclination to vomit; pulse 122, weak and irregular; tongue furred; urine scanty, and much coloured; bowels open; skin dry, and cooler than natural. Has lived for the greater part of the last twelve months on the island of Ceylon. Was immediately bled to the extent of thirty ounces, which afforded much, and almost immediate, relief; had also four grains of calomel, with ten grains of jalap, given him. This was, however, almost immediately vomited, when sixty drops of tinct. opii were given to moderate the excessive gastric irritability.

Nov. 20th, 8. A. M.—Has passed a very restless night. All the symptoms, though not so urgent as before bleeding, still continue, particularly the headache and dyspnea. Pulse 116, stronger, and rather more regular than at last visit. Blood taken last night of a buffy appearance.

Mittantur mox pleno rivo sanguinis unciae xxv.
Capiat submuriatis Hydrargyri, ℈j.
Pulveris Scillae, gr. i.
Tincturæ Opii gtt. xxx.—M.

6. P. M.—Feels better; the dyspnea and headache much relieved; has had the calomel and laudanum twice repeated since morning, with six grains of gamboge, for the purpose of acting on his bowels; has had also the fumes of the hydrargyri oxydum cinereum twice applied to the surface of the body, which was each time followed by a general glow of heat and free perspiration. Edematous swelling now almost general over the surface of the body; pulse 102, softer, and more regular; thirst urgent; blood taken in the morning very slightly buffy.

Omittatur Tinctura Opii.
Rept. Submurias Hydrargyri, et pulvis Scillae tertiaque hor.
R Ungt. hydr. ℥ij.
Aq. Ammon. ℥j.—M.
Infricetur ʒss. de die.
Capiat solutionis supertart. Potassae ʒiij. subinde.

The mercury took effect speedily, and with the additional employment of diaphoretics and purgatives, he finally recovered*.

Case of Rupture of the Right Lateral Sinus. By Dr BOBILLIER.

DANCOISNE, a soldier in the 61st Regiment of the Line, in garrison at Metz, was shut up in the police, the 9th day of February 1826. He was intoxicated, furious, and entirely out of his senses; he struck those who were shut up along with him, and dashed to pieces every thing that fell into his hands, so that they were obliged to bind him to the rail of a flight of stairs, on the outside of the police-office, by means of a cord placed round his body and his wrists. When left alone in this position, he shouted aloud, and made at first great efforts to escape; but some time afterwards the noise ceased, and, on going out to look at him, they found him dying. His lower extremities were bent under the weight of the trunk, and the head inclined forwards. I was called; but, on arriving, he exhibited no signs of life whatever. The face was pale, and the extremities already cold. The body was carried to the military hospital, and opened, 34 hours after death, by Mr Scoutetten, assistant surgeon-major, in presence of Mr Willame, premier professor.

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* See Edin. Med. Chir. Trans. vol. ii. p. 34.

The subject was of tall stature, and ordinary corpulence. There was no discharge of blood by any passage; around the wrists were livid marks and ecchymoses, produced by the compression of the cord, and some slight scratches at the knuckles. We found a small portion of the arachnoid, which covered the interior part of the left hemisphere, become red and inflamed. The vessels of the interior and of the exterior of the brain were highly gorged with blood; the tissues of this organ were healthy and pretty firm; a great quantity of blood was effused into the middle and posterior cavities of the cranium, and likewise into the vertebral canal. After some search we found no external lesion, except a rupture of the superior aspect of the extremity of the right lateral sinus, towards the junction of the occipital with the temporal bone. By compressing the extremity of the sinus, and making pressure upon its course farther backwards, blood could be made to flow through the opening. The lungs were gorged with blood; the heart presented nothing remarkable; the mucous membrane of the great angle of the stomach was of a dark-brown colour, with reddish spots interspersed; the veins of the stomach were specially distended, forming a projection, in relief, above the mucous membrane and arborescent forms, which were produced, according to the opinion of Mr Scoutetten, by the varicose state of those vessels.

The stomach was full of aliments, mixed with wine, diffusing a strong odour of vinegar; a lumbricus was found in it; the remainder of the intestinal tube was sound.

Although the individual enjoyed good health before this accident, and although his death may appear accidental, he was nevertheless affected with one of those obscure attacks of gastritis which produce no apparent derangement in the functions, but which, in the present case, had much augmented the effects of drunkenness. The impression of wine upon the stomach exerted so powerful an influence upon the brain, that outrageous madness was the result, and probably the commencement of inflammation of the arachnoid membrane covering the anterior portion of the left hemisphere of the brain; consequently there was present a predisposition to apoplexy. The disease was the effect of the *raptus* of the blood towards the brain, generating congestion, and terminating in the effusion of venous blood; a fact which offered some obstacle to the return of blood from the head.

If we recollect that the patient made great efforts to disengage himself from the ropes with which he was bound, with his head inclined forward; that, in this position, he wore a large stock of very hard leather, the lower ends of which must necessarily have compressed the jugular veins, we shall easily conceive that strangulation may have contributed to the production of the present apoplexy. On the one side, the blood was thrown with force from the heart towards the brain, by arteries, and its return by the veins was obstructed, on the other. It is not to be considered strange, therefore, that, in this position, the lateral sinus became lacerated at its extremity near the sinus of the jugular vein, at a point where it is very much dilated, and especially on the right side, which is wider than the left. The sinuses of the dura mater not being susceptible either of dilatation or contraction, may very well defend the brain from injurious compression, that might result from the reflux of the blood of the superior extremities, as in the cases of momentary obstruction opposed to respiration; but in case of pure strangulation, the return of the blood being no longer possible, laceration may take place so much the more easily, as the dura mater which forms the sinuses, is separated into three layers, the most external of which is so thin as to be easily burst by the pressure of the blood. This is probably what happened in the case before us. Besides, I do not believe that effusion here alone led to the apoplexy; cerebral congestion contributed to it considerably. It is known that, in several cases, in which effusion has not been found upon dissection, congestion, especially when prompt and rapid, had sufficed to occasion death; and that in others effusion, when it is inconsiderable, and takes place slowly, does not produce it. Whether it occur in the interior, or on the exterior, of the brain, the term a Hemencephalus is improper in all cases of apoplexy, since there is not always hemorrhage. It is quite true that apoplexy may succeed to arachnitis, and oftener still to encephalitis; but this is not always the case. We very often observe this disease taking place suddenly, without preceding alteration of the brain, because the vessels of that organ have very thin tunicks, are deprived of the cellular tunick, and their rupture may take place as primary. We have seen examples of this in young persons, who had suffered no preceding cerebral irritation, nor can we adopt the opinion of Mr Richond in all its extent.

It has been thought, that, had I been able to bring relief to this person at an earlier period, he might possibly have been saved. Without doubt a bleeding from the jugular vein might have diminished the effects of cerebral congestion, but it could not have arrested the hemorrhage, the result of the laceration, and this must have become mortal. It would be curious to inquire if an injury of this kind often takes place in hanged persons. They have been seen to return to life when a bleeding has been taken from the jugular vein, a moment after execution.

Mr Langry, Surgeon-major to the 32d Regiment of the Line, saved in this way a Spaniard who had been taken with arms in his hands. He had obtained, from the general who had ordered the execution, liberty to make the experiment, and the pardon of the condemned person, if he should be fortunate enough to save him. Mr Langry remained close to the place of execution, and immediately as the hanged man was detached from the rope, he opened the jugular vein. Blood flowed first with difficulty, but soon came in abundance, and after some convulsions, the criminal was restored to life; but he lost the use of one eye. The following day he merely felt pain in the loins, and in the neck, at the place constricted by the cord.

Mr Langry was congratulated for this humane action, and had the satisfaction of restoring the unfortunate person to his relations and friends [*].—*Journ. Univ., Avr.* 1826.

On Epistaxis, with Three Cases, successfully treated several years ago by Plugging the Nostrils, and a few Remarks on Hemorrhage. By Robert Masters Kerrison, M. D. formerly a Member of the Royal College of Surgeons in London.

THE danger of profuse hemorrhage from the nostrils having been noticed by Dr Howison in the last number of this Journal, and the employment of a sponge recommended, when the free admission of atmospheric air, and the application of a decoction of oak-bark with alum in solution, have been insufficient to restrain it, I have thought, that the three following cases, in illustration of the principle he has advocated, may not be unacceptable, as the means were not productive of so much inconvenience and disgust, as seem to have occurred from the use of sponge.

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[*] "A Neapolitan officer, hanged by the order of Admiral Nelson at Ischia, upon being subjected to the action of the galvanic pile by a young surgeon, was restored to life. Nelson was informed of the fact, and the officer was hanged a second time, as well as the person who had exerted himself to save him."

We have extracted the above notice from the *Journal Universelle*, p. 127, purely with the intention of eliciting a refutation, from some competent person, of so grave an accusation preferred against our great naval hero.

The agents which control hemorrhage, where ligature and *direct* compression are inadmissible, permit a distinction which may be usefully remembered in practice.

1. *External cold*, with or without fainting, by which the flow of arterial blood is diminished, and time obtained for its coagulation in the superficial vessels, of sufficient firmness to resist the impulse of the heart and arteries, when a reaction has taken place. The admission of cool air, the application of cold water, and of ice, act on this principle.

2. *The coagulation of the blood*, by the chemical influence of vegetable astringents, of vegetable and mineral acids, in a diluted state, or of a solution of metallic salts. The employment of a decoction of oak bark, of Peruvian bark, of pomegranate rind, of vinegar, of alum, and sulphate of copper in solution, fulfil this intention. Agaric, and a piece of sulphate of copper "a button of vitriol," were employed, by the older surgeons, in cases of hemorrhage from large vessels, where the ligature is now used, with more propriety and effect.

3. *The stimulus of ardent spirit*, to induce contraction of the skin and subjacent vessels. Oil of turpentine, alcohol, and the solution of various resinous bodies in alcohol, are used for this purpose. The actual cautery was freely employed by the ancient surgeons.

4. The application of dry substances, possessing little activity, but capable of retaining the blood upon the orifice of the open vessel, until spontaneous coagulation shall have taken place. This object is often accomplished by dry lint, the scraping of down from the surface of a hat, lycoperdon (*puff ball*,) cobwebs, amadou (*German tinder*), wheaten flour. These may be said to act by *inviscation*. Their effect is usually assisted by gentle compression.

In reference to epistaxis, several of these means are at once combined; a free circulation of air and cold applications are never omitted; astringents of some kind are generally employed, conjointly with cold. Oak bark is one of the best, although it is not possessed of such peculiar properties as to render it an object of exclusive attention, when the principle on which it acts is duly appreciated.

But it often happens, that these agents, however combined, are insufficient in severe epistaxis, and the employment of dossils of lint, dipped in whatever styptic, and put into the anterior cavities of the nostrils, occasions the blood to rush through their posterior opening, and to hazard suffocation. It is on such occasions that plugging the whole cavity from behind the uvula to the anterior part of the *septum narium* affords the only security. The means by which this has been effected with success, remain to be noticed.

CASE I.

In the year 1802, a poor old woman came to my house bleeding violently from the nostril; there had not been any external violence. I was, at that time, a young practitioner, and a surgeon. The free application of towels dipped in cold water to the face, throat, and between the shoulders, and plugging the anterior nostrils with lint, dipped in a strong solution of alum in water, did no good, for the blood rushed down the throat.

The quantity previously lost, and that which escaped during the few minutes of making this trial, impressed me with an opinion that she would die from hemorrhage, and I determined to make an attempt to plug the posterior cavity of the nostril.

A piece of lint, near four inches long, soaked in a strong solution of alum in water, was rolled into a spiral form (rather cylindrical), and a piece of thin twine, eight or ten inches long, tied to its smaller end. A very small bougie, having a piece of twine of the same length, tied firmly within half an inch of its point, was then introduced into the nostril; and being previously curved, passed until the string was visible below the *velum palati*. The twine was drawn out by a pair of forceps passed into the mouth, and tied to the end of the string attached to the piece of lint; care was taken to prevent the larger end of the bougie from being carried up the nostril.

The bougie was then withdrawn, the string being of sufficient length to be taken hold of by the left hand, before the lint reached the mouth. The lint was conducted by the points of two fingers of the right hand behind the uvula, whilst the twine was gently and steadily drawn until the smaller end of the lint reached the anterior nostril.

This was done awkwardly enough, no doubt, and not without suffocative sensations to the patient, partly from blood, and partly from the points of the fingers; but it was soon accomplished, and its effect perfectly satisfactory, for the bleeding orifice was compressed, and the hemorrhage ceased. I had prepared a piece of lint for the other nostril, but there was no occasion to use it.

In a few days the lint loosened and separated spontaneously, being lubricated by the secretion of the surface with which it had been in contact; it fell into the fauces, but was not swallowed. There had been an unpleasant smell from it for three or four days; yet not in the degree expressed by Dr Howison, probably because the quantity of putrid blood and secretion retained in the compressed lint were less considerable than would have been absorbed by the sponge. There was no return of hemorrhage.

CASE II.

This occurred in March 1810, to a gentleman who had an ulcerated throat, which presented the sloughy surface observed in syphilis, extending below the reach of the eye, and upwards, behind the *velum pendulum palati.*

In this state mercurial frictions were commenced, and all local applications to the throat abandoned *. The sloughy surface began to separate within ten days, when a formidable hemorrhage of arterial blood took place from the nostrils. The usual application of cold and styptics were of no avail, for the blood flowed in a stream from the anterior or posterior cavity of the nostril, according to the position of the head.

There was no time to spare for the longer trial of doubtful remedies; and, notwithstanding the irritable and ulcerous state of surface, I determined to confide only in mechanical means, by plugging the nostrils and compressing the artery. As soon, therefore, as a bougie could be obtained, I formed a cylindrical roll of lint rather smaller and as long as the little finger, pulling one end into a spiral form, for its more easy passage, soaked it in a saturated solution of alum in water, and drew it from the mouth into the anterior nostril, in the manner explained in the first case, until the lower end of the lint was just visible behind the velum palati.

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* This case was one of considerable interest. The patient had passed through a state of mercurial excitement from frictions in the summer of 1809, under my care, with the occasional superintendence of a surgeon of great eminence: he had become impatient, and discontinued the means sooner than advised. Late in the autumn of that year, he had a return of sore throat and constitutional disturbance, which another surgeon of high character declared not to be syphilitic, and said *it never had been so.*

Under this altered view of the disease, the patient commenced with a decoction of sarsaparilla, to which, after some time, small quantities of a solution of oxymuriate of quicksilver were added. Gargles of aqua calcis, and pencilling the ulcerated surface occasionally, with a solution of nitrate of silver, or mel æruginis, were employed during many weeks, without any amendment, and until the ulceration became alarmingly extensive.

Having expressed his confident opinion that nothing less than the cautious and protracted employment of mercury would check the progress of this ulceration, and save the patient's nose, he consented (after finding this opinion confirmed by another surgeon) to enter upon it. To prove the agency of the remedy through the general system, all local applications to the throat were carefully avoided. The patient recovered his general health, and had no return of ulcerated throat, nor of any syphilitic symptoms, which I have had the opportunity of knowing, having seen him professionally on other occasions, up to the present time, May 1826.

The hemorrhage continuing, in a partial manner, the bougie was passed on the other side of the septum, and a piece of lint drawn forwards. A small oozing still occurred from the anterior nostril, which ceased, on applying some lint dipped in the aluminous solution by a probe; care being taken not to use such pressure as would alter the situation of that lint which had been drawn forwards.

In less than a week the larger pieces of lint loosened and fell into the fauces; they were thrown out, imbued with a putrid sanious fluid, and covered with mucus. The smell and taste of the fluid distilling into the throat had been unpleasant to the patient, and the odour was perceived by others in the room; but by no means to a degree of extreme disgust.

No return of hemorrhage took place; a small scale of bone came from the anterior nostril several weeks afterwards: whether its periosteum had been previously injured by the ulcerative process, or became so by the pressure of the lint, may admit of a difference of opinion.

Case III.

An unmarried woman of fifty years of age, of spare habit and rather muscular form, had been liable to slight epistaxis. She used to be relieved by the free admission of cool air, with local application of cold vinegar and water, assisted, on two occasions, by the abstraction of blood from the arm, when I found the pulse quick and hard.

In April 1816 she sustained such a violent attack, and so much blood had escaped prior to my arrival, and continued to flow, notwithstanding the free circulation of air, and the application of the most accessible domestic means, viz. cold vinegar and water, and afterwards of powdered alum dissolved in water to make a saturated solution, which was passed into both anterior nostrils with dossils of lint, by means of a probe suitably curved, to avoid the turbinated bones, that I did not consider it safe to delay the endeavours to make a compression upon the bleeding surface. This was done exactly in the same manner as explained in the first case; both nostrils were plugged, and the hemorrhage effectually restrained.

I saw this patient, now and then, on account of other indispositions, for three years afterwards; but she had no return of epistaxis. The inconveniences of odour and taste, inseparable from the presence of an extraneous body in each nostril, and the decomposition of the fluids absorbed by the lint, were endurable without much complaint.

The membrane lining the nostrils is very vascular. It is supplied with blood, chiefly by branches of the internal maxillary artery, one considerable branch of which passes through the spheno-palatine foramen, and is capable of throwing out much blood in a short time. As this vessel enters the nose near the turbinated bones, which are liable to be affected by syphilitic disease, it was probably implicated by ulceration in the second case, and by spontaneous rupture in the others.

I am inclined to believe, upon a retrospect of these cases of epistaxis, that none of them would have yielded to the application of a decoction of oak-bark, nor of any astringent, employed as an injection, even aided by general treatment, until so considerable a loss of blood had taken place, as would have entailed a train of symptoms, the result of exhaustion, which no surgeon ought to expose his patient to the hazard of sustaining, after being aware of the facility with which it can be restrained.

In performing the operation, the situation of the turbinated bones ought to be well considered, the conducting instrument sufficiently firm, but flexible. A small plaster-bougie is better than any metallick substance, for reasons sufficiently obvious. Its curvature should correspond with the arch of the palate, and its direction such as to move along the lower part of the nasal cavity, until the string, tied near the point, is seen by looking into the mouth.

The dossil of lint ought to be of a size that, when drawn into its place, will compress moderately; but not so large as to abrade the membranous surface, or injure the turbinated bones, by forcible traction. The string should be long enough to permit one end to be taken between the finger and thumb of the left hand, before the lint enters the mouth, by which all hazard of slipping from the bougie will be avoided.

There is, perhaps, nothing new in this mode of proceeding. Still it may be desirable for the junior members of the profession, who have not yet met with a severe case of epistaxis, to know, that, however formidable, and it really is so, the bleeding *can* be readily controlled, and that, by making themselves familiar with the details recited, they will not be foiled in their first endeavour to rescue the individual from considerable peril, and to leave their patient in a state of security.

Some saline aperient medicine or castor-oil will be proper, as soon as the nostrils have been plugged, to prevent the stagnation of whatever blood may have been swallowed, and a free state of bowels should be kept during the succeeding fortnight.

The diet ought to be light, chiefly farinaceous, with milk; a little beef-tea, mutton or chicken broth once, or even twice a day, in cases of much exhaustion."

NEW BURLINGTON STREET, LONDON,
May 15. 1826.

Further Remarks on the Utility of Camphor and Hyoscyamus in the Treatment of some Affections of the Bladder and Urethra. By BENJAMIN BELL, Esq. Fellow of the Royal College of Surgeons, Edinburgh and London, Surgeon to the Asylum for the Blind, and Royal Public Dispensary, Member of the Medico-Chirurgical Society of London, &c. In a Letter to one of the Editors.

MY DEAR SIR,

I HAVE, in the First Number of your valuable Miscellany, stated in a general way my views relative to the pathology of gonorrhea, and shall not at present allude particularly to that subject. My intention in sending you the following remarks for insertion, arises from a wish to impress on the profession the value of camphor and hyoscyamus in the treatment, not merely of gonorrhea, but of some other diseases of the urinary organs. From my own practice, and in consequence of numerous communications from medical friends, I have been confirmed in my opinion with regard to the utility of camphor and hyoscyamus, when used in combination, as a remedy in gonorrhea; and every day's experience tends to convince me, that, when they are given in sufficient quantity, they seldom fail to allay, not merely local irritation of the urinary surfaces, but also the constitutional irritability which always attends such a condition of parts.

Camphor, every one knows, has been long employed with advantage as an adjunct to other medicines in the treatment of some cases of gonorrhea; it has also been used with success as a topical application. But, notwithstanding that this medicine has been much lauded by several writers who have published the results of their experience, still, it is far from being in general use; and few practitioners, with whom I have conversed, had given it a fair trial previous to the publication of my remarks on the subject. Those who had employed it were in the habit either of prescribing it in very minute quantities, or in such a form that the stomach loathed it ere the constitution had experienced its influence.

In order to prove beneficial in irritable affections of the urinary organs, camphor must be given in large doses, frequently repeated; nor can we be assured that the system is under its influence, until the pulse be more or less affected; and in some cases it is even necessary that a slight degree of vertigo should exist, before we think of intermitting or relinquishing its exhibition. I have more than once found it necessary to continue the employment of camphor in very violent cases of chordée, ardor urinae, and irritable bladder, even after vertigo had taken place, and to maintain the vertiginous symptoms, for a considerable period, before much benefit was experienced. Such a line of practice, however, is rarely necessary, and cannot be justified, except in extreme cases.

Camphor, when given alone, is exceedingly apt to induce nausea, heartburn, and occasionally tremors: it is therefore advisable to combine it with some other anodyne which is not apt to induce constipation. Hyoscyamus I have found to answer the purpose. Any of the pharmaceutical preparations of this drug may be combined with camphor, but the extract appears to me to be the best, as it contains, when properly prepared, all the active principles of the plant.

The form of pill is the most simple, and, so far as my experience goes, the most efficacious: and here I may state the formulæ which I have been in the habit of employing:

℞ Gum. camphoræ, gr. iij.
Ext. hyoscyami, gr. ij. Misce ut fiat pilula.

℞ Gum. camphoræ,
Ext. hyoscyami, āā gr. ij.
Pulv. capsici, gr. i. Misce ut fiat pil.

℞ Gum. camphoræ,
Ext. hyoscyami, āā gr. ij.
Pulv. ipecacuanhæ, gr. i. Misce ut fiat pil.

℞ Gum. camphoræ, gr. ijss.
Ext. hyoscyami, gr. ij.
Olei carui. M. i. Misce ut fiat pil.

Since the publication of my former paper, several practitioners of my acquaintance have prescribed camphor and hyoscyamus in the form of an emulsion; but this formula does not appear to me to be a good one, as it is bulky, and apt to occasion sickness at stomach. I have rarely found the pill to occasion nausea, and when it did give rise to squeamishness, I felt inclined to attribute it to peculiarity of idiosyncrasy, or to some accidental cause, as with several patients it agreed at one time and not at another. In whatever form camphor and hyoscyamus are given, they must be exhibited in such quantity as to affect the system rapidly, and they may be prescribed in much larger doses than is generally imagined. A medical friend of mine was in the habit of taking gr. xxviii. of the extract of hyoscyamus nightly, at one dose, for a distressing chronic tenesmus, which tormented him, without experiencing any other ill effect than a very slight degree of vertigo. From the brief and hur-

ried manner in which my former communication to you was drawn up, I find that some practitioners have not fully understood me, and have imagined that camphor and hyoscyamus were given by me with a view to check the discharge in gonorrhea. Although in *many* instances I have found that the discharge has ceased during their exhibition, and so soon as the constitutional and local irritation was relieved, it never was my intention that they should be prescribed with that view. My object in giving them was to allay, if possible, the distressing symptoms of chordée and ardor urinæ. In so far they have seldom failed to answer the intention for which they were given, unless the patient had been previously under the influence of opium, when, indeed, both camphor and hyoscyamus seem to exert little effect on the system.

It may be said, Why should camphor and hyoscyamus supersede opium? which is a sedative at once powerful and easily regulated. Opium is indeed a powerful sedative, but it cannot, I conceive, be employed with propriety, unless in very desperate cases, without being productive of mischief. Like belladonna*, it acts powerfully on the nervous and lymphatic systems, giving rise to nausea, tremors of the limbs, vertigo, headache, heartburn, and obstinate constipation. If, then, we have remedies which can allay irritation, without occasioning costiveness or other bad effects, they merit attention. Hyoscyamus has a laxative property superadded to its anodyne qualities; and, when combined with camphor, seems to act directly upon the mucous surface of the urinary organs in a way very different from that of the generality of sedatives, which have a tendency to check the secretions, and to give rise to other constitutional disturbance. In their secondary effects, camphor and hyoscyamus in combination differ from opium; the former do not leave that state of general lassitude and uneasiness which almost always follows the exhibition of the latter. Nor is the exhibition of purgatives so necessary when they are employed; consequently the rectum is not called into such frequent and violent action, and the urinary organs enjoy a degree of rest from sympathetic irritation, which is not the case when opium is given either as a local or general remedy.

The object to be held in view, in the treatment of irritable affections of the bladder and urethra, is to allay local irritation, without occasioning constitutional disturbance. Local irritation cannot be allayed, if the affected parts are frequently called into action. The irritation, indeed, may be made to alter its type, and to assume a chronic instead of an acute form,—a form the most difficult to cure, as all conversant with the treatment of gleet, catarrhus vesicæ, and chronic irritation of the neck of the bladder, will allow. If opium be employed in the treatment of inflammatory or irritable affections of the urinary organs, purgatives of an active kind must be exhibited at the same time; of course, the neck of the bladder, and all those parts which sympathise with the rectum, suffer, and sometimes suffer severely, in consequence of the tenesmus which supervenes on the employment of cathartics. I have, therefore, for two years past, avoided prescribing opium in irritable affections of the urinary organs, except in those cases where it was necessary to combine it in very minute quantity, with laxatives and diaphoretics, in order to modify their operation.

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* I was in the habit of employing the extractum belladonnæ three years ago as a local application to the perineum in chordée, but was never fortunate enough to find it prove of service.

Having stated briefly my reasons for preferring camphor and hyoscyamus to other anodynes, I shall proceed to give short details of two or three cases in illustration of the practice.

CASE I.—*Gonorrhea.*

January 20th 1826.—Robert Reid, aged 36, labourer; a man of full habit and very robust, complains of ardor urinæ in the anterior third of the urethra. There is some redness at the point of the glans penis, and an oozing of a viscid limpid mucus. Had connexion with a suspected female on the evening of the 17th, and observed the foregoing symptoms for the first time on the morning of the 19th:

℞ Sulphatis zinci ℈
Aquæ lb. ij. Solve. Wash for the penis to be used frequently during the day.

22d.—Ardor and inflammation increased, discharge more viscid, and of a greenish hue, gluing together the lips of the urethra. Let him cease to use the lotion.

℞ Camphoræ, gr. iij.
Ext. hyoscyami, gr. ij. M. in pil. talis xij.
Sumat unam quarta quaque hora.
Balneum tepidum vespere.

23d.—Ardor much less severe; discharge more copious. Continue.

26th.—Improves rapidly; inflammation of glans penis, and discharge, much diminished.

No *gonflement*; bowels have been opened for two nights past by sulphur sublimat.

Continuentur hyoscyamus, &c.

February 6th.—Cured. Directed to use cold water as an injection for some time.

CASE II.

June 18th 1826.—James Farquharson, ætat. 18; of a delicate habit; complains of pain, extending along the course of the urethra as far back as the bulb, attended by acute ardor urinæ. The prepuce is inflamed and swelled, and muco-purulent matter oozes in considerable quantity from the urethra. Suffers from chordée at night.

About a month ago had connexion with a suspected female, but did not observe any symptom of disease until a fortnight afterwards. Desired to bathe the penis in a weak solution of the extract of lead; to keep his bowels moderately relaxed, and to take gr. vi. of camphor and four of hyoscyamus three times a day.

22d.—Symptoms much improved. Desired to continue his medicines.

26th.—Chordée has ceased to annoy him; ardor scarcely felt; discharge has nearly disappeared; complains of lassitude.

Intermittantur camphora, &c.

Let him take a few drops of the muriated tincture of iron two or three times a day, in a little water.

CASE III.

January 19th 1826.—*Chronic irritation of the Neck of the Bladder, and of the prostatic portion of the Urethra.*

Mr W. A. aged 33, of a very spare habit, complains of pain extending across the loins, which is most severe in bed and during cold weather. Experiences considerable uneasiness about the cervix vesicæ, especially during micturition. Urine comes away in drops, and during cold weather involuntarily. At present it is voided three or four times in the course of an hour, in the quantity of an ounce at a time.

Complaints commenced about two years ago, in consequence of exposure to very inclement weather. The urine at that period flowed in drops, but without pain. About six months after he was first affected, he was one night seized with violent pain, extending from the neck of the bladder to the bulb of the urethra; this symptom was followed by the retention of urine. A medical gentleman passed the catheter, and continued to do so daily for some time. He got better, and remained tolerably well till about two months ago, when the complaint returned in its original severity. On examination per anum, no induration or enlargement of the prostate can be felt, nor is there any increase of pain of the cervix vesicae on pressure. A tolerable sized bougie passes with ease, but the bladder feels contracted, and its rugae can be felt distinctly by the point of the instrument.

Let him take a tea spoonful of calcined magnesia, and a similar quantity of sublimed sulphur, every night at bed-time, and three grs. of camphor, and two grs. of hyoscyamus, three times a day, increasing the doze of the combination by five grs. every third day.

26th.—Has taken eight grs. of the ext. hyoscyamus, and sixteen of camphor daily, for three days past; urine flows in a full stream, unattended with pain, and he can retain it for six hours at a time. To continue his medicines.

February *5th.*—Cured.

Case IV.

Chronic Irritation of the Cervix vesicae, membranous part of the Urethra, and Prostate.

January 25th 1826.—Mr R———, a gentleman from the north of Ireland, about 33 years of age, on the point of marriage, came to me this morning, complaining that he experienced great misery in consequence of a discharge of flaky matter, which comes away mixed with his urine. He also suffers occasionally considerable uneasiness in the region of the prostate, and along the whole course of the urethra. Is constitutionally temperate; but when he does exceed a little, observes that his complaints are exacerbated, and more especially after indulging in any kind of malt liquor.

His complaints are of a year standing, and came on gradually.

On questioning him minutely, I found, that, when at school, he had been addicted to that vice which Tissot describes. He had also suffered from a mild attack of gonorrhea about eight years ago, which was successfully treated by cold water injections.

I ordered him to keep his bowels gently relaxed by means of sublimed sulphur, to bathe the parts morning and evening with cold water, and to take three grains of camphor, and two of hyoscyamus, in the form of pill three times a day. I also directed him to take, when annoyed by cardialgia, a powder composed of grs. xii. of columba root, gr. xv. of super. carb. of potass, and gr. vi. of magnesia.

The irritation of the bladder and urethra diminished daily, in the course of a week he ceased to observe any flaky matter in the urine. He returned to Ireland on the 29th, well and in good spirits, but was desired to persevere in the use of his medicines for eight or ten days.

Case V.

Chronic Catarrh and Inflammation of the Bladder and Prostate.

November 20th 1825.—Mr E——, aged 40, a man of a very spare habit, complains of acute and constant pain in the glans penis, and in the region of the bladder generally; but more especially at its cervix. Feels also a degree of uneasiness across the loins, and is plagued by frequent and urgent calls to make water, which he voids every ten or fifteen minutes, the urine flowing in a small and interrupted stream. The urine deposits a thick gelatinous matter, which adheres to the bottom of the chamber-pot.

His complaints came on a year ago suddenly, after sitting upon a wet seat in very cold weather.

As his malady appeared of rather a dubious character, it was deemed advisable to introduce a sound. When the point of the instrument had passed the triangular ligament of the penis, it met with an impediment to its farther introduction, apparently at the caput galinaginis. But on depressing the handle of the sound, while its concave side was pressed up towards the arch of the pubis, it slipped into the bladder. No calculus could be discovered after the most careful examination, but the prostate felt hard to the touch, and was painful on pressure.

22d.—For two days past has felt great uneasiness in the bladder, in consequence, he thinks, of the irritation occasioned by the sound. The urine comes away in drops, bowels costive.

Sumat olei ricini ℥i.

℞ Gum. camphorae, gr. xxxiv.
Ext. hyoscyami gr. xxiv. Fiant pilulae duodecim, quarum sumat unam quarta quaque hora.

Balneum tepidum vespere.

24th.—Has taken five pills daily, micturates more freely and less frequently. Bowels open, has some considerable vesical uneasiness. Adhibeantur hirudines sex perinaeo.

25th.—Leeches bled pretty freely, symptoms relieved, slept for several hours consecutively last night, which he has not done for some months before.

℞ Sulphuris sublimati,
Magnesiæ *āā* ℥ i. Misce et divide in doses decem, quarum sumat unam hora somni.

28th.—Was restless during the night, in consequence of cardialgia. Vesical symptoms continue to improve; made water only thrice during the night, instead of doing it every ten minutes, as was formerly his habit.

Continuentur medicamenta.

29th.—Still complains of heart-burn; urinary symptoms improved.

30th.—Returned to the country somewhat debilitated, but in other respects nearly well.

26. *St Andrew's Square,*
EDINBURGH.

Case of Lithotomy, attended with Hemorrhage. By JOHN SHAW, Esq. Surgeon to the Middlesex Hospital, &c.

THE patient was a stout and fat country man, about sixty years of age. When he came to the hospital, he did not know the nature of his complaint: indeed, so little idea had he that the cause of his symptoms was a stone in the bladder, that, on my proposing to sound him, he left the hospital. He was, however, persuaded to return; and about ten days after his admission, he submitted to be sounded. As the rub of the stone was sometimes felt only on the entry of the staff through the neck of the bladder, I was led to suspect that it was either a calculus projecting from a bed in the prostate, and which was pushed back into its sac by the convexity of the staff going over it, or that it was so small that it might, perhaps, be passed by the urethra.

Under these circumstances, and as the slight irritation under which the patient suffered was always easily relieved, I did not perform the operation until he had been some time in the hospital, and had been repeatedly sounded.

Operation.—After marking the place of the tuberosities of the ischia, I passed my left fore-finger into the rectum, for the purpose of guarding the gut during the first steps of the operation. I commenced my incision an inch above the anus, near the *raphe*, and carried it obliquely past the anus. The patient being very fat, I at once thrust the scalpel to a considerable depth; so that this incision went through the skin, and at least an inch of fat. After cutting through this adipose substance, I withdrew my finger from the rectum, and passed it into the wound, for the purpose of directing the incisions through the levator ani.

Then, feeling the staff through the face of the prostate, I cut upon it, and carried my knife forward through the membranous part of the urethra and prostate, following and directing the point with the fore-finger of my left hand. On making this incision there was a gush of fluid. I thought that it was urine; but, on observing it flowing over the back of my left hand, I saw that it was blood. I, however, proceeded with the operation; and, on the bladder being fairly cut into, there was a second gush of fluid, which was urine. Before introducing the forceps, I enlarged the wound a little, with a common curved bistoury. I now felt a very small stone lying on the top of my fore-finger; this was easily brought away by the common forceps; and, on introducing the finger again, a second stone, of a similar size, was felt, which was as easily extracted. The operation, I am told, did not take up more than three or four minutes.

The blood now flowed so profusely, that I was at first afraid I had wounded the pudic; and I therefore immediately put my finger on the place of that artery. I was relieved by finding it beating distinctly and strongly; but, though pressure was made on it by me and my colleagues, the bleeding was not at all commanded. Now, recollecting that the bleeding had taken place immediately on my cutting through the prostate, and considering that the pudic artery was felt distinctly, while pressure on it did not stop the hemorrhage, I hoped that the bleeding, although of an arterial colour, might be principally from the veins of the prostate. The patient was kept on the table for a considerable time, when the bleeding appearing to subside, he was carried to bed. For the first ten minutes, the lower part of his body was left exposed, and his thighs and perineum were covered with towels: but it being found, on examining the sheet, that he had lost about six ounces of blood, the wound was again examined.

It happened to be a very bright sunshine, and the patient's bed being close by a window having a south-west exposure, it was possible to place him so that the sun shone fairly into the wound, when the lips were held open. The hemorrhage had now so far subsided, that the wound could be sponged clean to such a depth that the place of the trunk of the pudic could be seen; but, as this vessel was distinctly felt beating all along the ramus, and as pressure on it had still no effect on the bleeding, we were satisfied that it was untouched, and the more especially as, by sponging the wound clean, we could *see* the blood oozing apparently from the bladder. But as, from the depth of the parts, it was not possible to apply a ligature with any degree of certainty, and as there was only an oozing, a canula, with lint and sponge wrapped round it, was introduced into the neck of the bladder.

After this there was not any more bleeding, excepting a little through the canula, which soon stopped of itself. It was not thought proper to plug the canula, as the bladder might have been filled.

About four o'clock the patient became so restless, and begged so much to be allowed to pass his urine, that I suspected the bladder to be filled with coagula, and I therefore removed the canula; but, on putting my finger into the bladder, I found very little blood there. As there was no hemorrhage, the tube was not again introduced.

The patient presently began to complain very much of pain in his abdomen and chest. Being cold, and the pulse low, he got some cordials; after which he was more composed; but, from seven to nine he seemed to suffer excruciating pain in his bowels. This increased so much, that he could not lie still: indeed, he got up several times, and was with difficulty restrained from getting out of bed; but it was remarkable that, notwithstanding these struggles, he never fainted; indeed, the loss of blood did not seem to have weakened him. During this time he occasionally took a spoonful of brandy, with a little wine and sugar. From nine to ten he was more composed; after this he again seemed to suffer excessively from spasm; and he died about half-past eleven.

It may be supposed that the symptoms just detailed are not those consequent on the loss of blood; and that they are more like the symptoms of inflammation of the bowels. It is not easy to explain the cause of the violent pain in the chest and abdomen which follows the loss of blood; but I believe the fact of its frequent occurrence is so well established, that few surgeons would be deceived by it, so as to treat a patient under these circumstances for inflammation of the bowels.

On the following morning the body was injected; and this was done by separate pipes in both common iliac arteries, the two external iliacs being tied. The inferior mesenteric artery was also injected by another pipe. My reason for proceeding in this way, was to insure the injection passing through every vessel that had been wounded. It is well known to all practical anatomists, that, when it is attempted to inject the arteries of the pelvis with one pipe put into the aorta, many of the small vessels are not filled. The inferior mesenteric was injected, because (as I had, during the operation, felt a large artery beating in the rectum) I thought it possible that a branch from it might have been the vessel wounded.

The vessels in the perineum were first examined; and after it was found that the trunk of the pudic and the artery of the bulb were entire, the penis, bladder, and rectum were taken out; the muscles and the arteries being cut off close from the rami of the ischia.

The figure in the plate, which is taken from a drawing made from the parts after I had demonstrated them to the pupils, and had shewn them to several of my friends, will sufficiently explain the source of the bleeding.

The original drawing is nearly of the full size; the depth from the external wound to that in the prostate being four inches and a-half.

Explanation of Fig. 2. Plate III.

A is the trunk of the internal pudic. This artery, in separating the parts, was necessarily divided at E.

B is the artery of the bulb, raised out of its natural situation, and tied up by a thread. This artery is untouched. In this view it necessarily appears separated from the main pudic; but the circumstance of its being completely distended with injection, is sufficient proof that it could not have been wounded during the operation.

D is the ischiatic, cut off short.

C is a vessel of considerable magnitude, imperfectly filled with wax, as far as the margin of the wound through the prostate.

The dotted lines F mark the continuation of the same vessel, passing under the pubis into the body of the penis. This part of the vessel is represented in outline; the wax from C having escaped into the bladder.

By making the examination of the vessels in this way, there is a proof, as far as dissection will afford, that the vessel *c* was wounded in cutting through the prostate. It may also be assumed, that the several circumstances of there being a gush of blood at the moment the prostate was cut,—that pressure on the main pudic against the ramus of the ischium had no influence over the hemorrhage,—and that the blood was seen to ooze from the neck of the bladder,—are all evidences that the wound in the vessel *c* was the source of the hemorrhage.

A distribution of the branches of the pudic, similar to that which occurred in this case, is more frequent than is generally supposed. But I had neglected to observe it till a few years ago, my attention having been at that time particularly directed to the varieties in the branches of the pudic, by the proposal made by M. Dupuytren to carry the incision through the prostate in a direction upwards, instead of laterally. There happened to be at that time two bodies in the dissecting room in Great Windmill Street, in both of which the artery to the penis passed along the prostate.

I have always since taken notice of this variety in my public demonstrations. Indeed, after I found that pressure on th main pudic had no effect on the bleeding, I told several of th pupils that I feared there was such a distribution of the vessel in this case.

I have since referred to the splendid work of Tiedemann, which was lately brought to this country. In the thirtieth plate ther is a figure representing exactly the same distribution of the arteries to the penis as that found on the examination of my patient.

Tiedemann describes it as representing an unusual distribution of the left dorsal artery of the penis, in a man 36 years of age. He adds, in a note, that he has seen the same on both sides in a man of 28 years of age, and also in a boy. He has likewise seen a similar variety in the arteries passing to the clitoris.

I find that Winslow has given the description of the artery to the body of the penis in such a way as to lead us to suppose that he did not consider its passing along the prostate, and under the symphysis of the pubes, as being an unusual distribution, (See Winslow, Traité des Arteres, sect. 249, 250, 251.) Haller also states that the older anatomists generally describe the pudic as passing along the prostate, and under the symphysis pubis, (See his Fasciculus, IV.) Mr Burns, also, in his work on Aneurism, mentions that he has seen a similar distribution in three instances. Dr Barclay has also given us more authorities for this variety. Within these few days, one of my pupils pointed out to me the following passage in the work lately published by Mr Harrison, of Dublin, and which I have much satisfaction in quoting.

" In my dissections of the arteries, I have occasionally observed that the pudic artery, on one or both sides, appeared unusually small; and, on more accurate examination in such cases, I have found that the internal iliac had given a distinct branch, which ran along the side of the bladder and prostate gland, and, passing beneath the arch of the pubes with the dorsal veins, became the dorsal artery of the penis. *Should such a variety exist in one who was to become the subject for the lateral operation of lithotomy, I fear this artery must be wounded*; and, judging from its size and situation in those cases in which I have seen it take this course, I should apprehend very serious consequences from its division. It is not improbable but that some of those alarming and fatal cases of hemorrhage, which have occurred even to the best operators, may have depended on this variety. I may observe, that I have noticed this variety very frequently in children under eight years of age, but as yet I have only met with three instances of it in the adult *.

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* *Surgical Anatomy of the Arteries.* By R. Harrison, Demonstrator of Anatomy, Dublin. Vol. II. p. 124.

The above authorities are sufficient to induce us to consider the artery, from which the hemorrhage took place in my patient, as a source of great danger in the operation of lithotomy. I do not purpose to enter at present into an examination of the most likely mode of avoiding this; but I trust that the history of this case will have the good effect of directing the attention of lithotomists to the question. The following passage from the work of the veteran Boyer, although it may be in some degree consolitary to the surgeon who loses a patient by hemorrhage, is rather an appalling testimony of the difficulties and dangers of the operation of lithotomy.

"L'hemorrhagie est un des accidens les plus ordinaires de la lithotomie. Cet accident a souvent été mis sur le compte de l'operateur, ou celui de precedé dont il a fait choix. Mais presque toujours injustement, parceque les arteres du perinée offrent dans leur situation et dans leur direction des varietés telles, que le chirurgien le plus habile n'est jamais absolument certain des les eviter, quelque soit le procédé dont il se serve *."

Whilst engaged in considering the present case, one of the most interesting in its details, and valuable in its consequences, that it has been at any time our duty to put on record, we may observe, that an injected lower extremity, formerly presented to us by our friend Dr Hulme, exhibits the singular combination of the obturator artery, both arising from the epigastric trunk, and itself giving off, within the pelvis, the artery of the penis. At same time, this penal artery, before it passes under the pubes, sends back a considerable division to the prostate gland and urinary bladder. The following are the relative dimensions: and it appears, that *this individual could not have been operated upon, by either of the capital operations for stone or femoral hernia, without falling a sacrifice to hemorrhagy, from the singular distribution of his vascular system.*

The femoral artery under the origin of epigastric trunk, measures 10, (on a scale of which 10 is = ¼ inch); epigastric trunk 4; obturator 3.7, after giving off penal branch 3.5; penal branch, before giving off the prostatic, 2.5; prostatic branch 1.6, in the prostate gland 1.5; penal artery, after giving off the prostatic, 2.3. The true pudic artery has the usual course and origin; but runs off into three small twigs in the perineum, where it should begin to ascend upon the ramus of the ischium. The subject seems of eight or nine years †. —EDIT.

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* *Traité des Maladies Chirurgicales.* Par M. le Baron Boyer. Tome ix. p. 479. Paris 1824.

† See Barclay on the Arteries, p. 236.

On the Use of Camphor in Gonorrhea. In a Letter to one of the Editors from a Private Correspondent.

Sir,

Having had my attention directed to the use of camphor and hyoscyamus in cases of gonorrhea, by the perusal of an article written on this subject by Benjamin Bell, Esq. surgeon here, and inserted in the First Number of your Journal, I tried their effects upon three or four patients during the months of March and April last, and had reason to be highly satisfied with the result; but, as these patients had come under my care in different stages of the disease, and had (only one excepted) been previously under medical treatment of a nature rather diversified, I did not reckon myself warranted in adopting Mr Bell's prescription exclusively, till such time as I should have its usefulness proved by a more extensive exhibition. Besides, I had another reason for wishing to give it longer trial before expressing my approbation, i. e. that the veracity of our patients cannot always be strictly relied on; and this makes it essentially requisite to have a considerable number of cases, and consequently of facts, proved by our own observation, before we can confidently decide upon the merits of one mode of treatment in preference to another.

All that was wanting, however, in the cases alluded to, in order to substantiate the superiority of the medicine in question, to my satisfaction at least, was subsequently supplied to me in the best possible manner, namely, by personal experience. In the month of May last, I was unfortunate enough to contract the disease myself, and thus had an opportunity at once of exhibiting the medicine, studying its effects both by appearance and the sure test of my own sensations, and of comparing these effects with what I had experienced on a former occasion, when employing a different method of cure.

In my journal I had kept a correct account of my own case, with the treatment and apparent consequences, and I shall here submit to you an exact copy of it as there entered, being written anonymously, and as if it were the case of a patient.

Gonorrhea.—A. B. æt. 23, states that he received the infection about one o'clock in the morning of Sunday, May 21. On the 23d, in the afternoon, when about to make water, he perceived that the orifice of the urethra was, as it were, slightly sealed up with a kind of glutinous substance, which, upon the urine being first evacuated, caused it to pass in different directions, in small interrupted streams. Some unusual heat about the top of the penis, with a tickling sensation in the course of the urethra.

24th.—A slight discharge from the urethra. Ardor urinæ considerable. Bowels slow. Hab. pilul. laxantes iij. Partes assidue foveant. aq. calida.

25th.—Bowels opened by the medicine. Some chordée. Ardor urinæ more severe; discharge increased in quantity, and of a thicker consistence. Parce alatur. ℞. Gum. Camph. ʒj. cum extract. hyoscyami. ℈ij. Rub down the camphor with a little alcohol as a menstruum; add the hyoscyamus. Beat them to a fine mass, and divide it into pills of five grains each. Sumat duas sexta hora.

26th.—Discharge increased. Ardor urinæ very painful. Chordée repeatedly last night; to-day there is a sympathetic swelling in each groin, and inflamed parts, like small cords, can be traced from the region of the pubes, alongst the upper part of the penis. Let the patient avoid exercise as much as possible. Pilul. camph. comp. continuatur.

27th.—Symptoms not apparently diminished. Micturition seldom and painful. Bowels not sufficiently open. Sumat pilul. laxant. iij. p. s.

28th.—The swelling of the glands increased in size, but not quite so painful. Three attacks of chordée last night. Ardor urinæ very severe. Bowels open. Let him take three of the comp. camphor pills every sixth hour, instead of two as before.

30th.—Discharge copious. Heat during micturition not so great. Only one attack of chordée last night. Swelling of the inguinal glands not so powerful, but their size remains undiminished. Medicam. cont.

31st.—The inflammation seems to have extended to the neck of the bladder, as micturition has become more frequent, though not so painful. Bowels slow. Hab. sulph. mag. ʒvi. in aq. menth. pip. ℥iv. Pil. camph. cont. ut antea.

June 1.—Bowels open; micturition frequent: discharge increased; chordée not severe. The patient having been under the necessity of riding on horseback several times during the last six days, generally felt very much the worse of it; and as soon as possible after dismounting, had recourse to the warm bath, which gave considerable relief. Some ardor urinæ. Sumat pil. camph. c. quatuor sexta quaq. hora.

June 3.—The sympathetic swellings of the inguinal glands, and on the region of the pubes, &c. have been much diminished. Discharge as before. A frequent desire to make water after exercise, but the ardor urinæ is nearly gone. No chordée of any consequence. The patient takes no spirits, and wine very sparingly. Med. cont.

6th.—Discharge thinner. Micturition nearly natural; swelling almost gone. Pilul. tres tantum sumat sexta q. h.

9th.—Yesterday having been too much on horseback, the desire of frequently voiding urine returned, accompanied with the usual uneasy sensation in the course of the urethra, and about the rectum, but without any positive pain; however, by rest, and the application of cold water to the perineum, this symptom was easily removed. There has been no swelling in the testicles, which may perhaps be attributed to the suspensory bandages having been used from the very first appearance of the disease. Let him take only two pills at a time, instead of three as formerly.

12th.—The inflammation in the groins, on the pubes, and dorsum penis, has entirely disappeared. No chordée; no ardor urinæ, but merely a tickling sensation in the urethra, within half an inch of the orifice, during micturition. Bowels open. Discharge thinner still, and much less.

14th.—Nearly well. Let the parts be frequently washed with cold water, and let the patient live without restraint in regard to diet. Pilulæ omittant.

16th.—No appearance of the disease remains, except a very inconsiderable quantity of a mucus-like fluid at the orifice of the urethra; and even this only perceptible once or twice a-day.

The above is a correct account of the case, and though I cannot say that the discharge was lessened by the medicine, yet I am confidently certain that the most distressing symptoms were first diminished, and then entirely removed by it. The only part of the treatment omitted in the journal was occasional injections of warm water in the early stages, and cold in the latter; but, as these were used merely out of regard to cleanliness, I did not think it necessary to insert them. Having been in the country for some weeks subsequent to the last mentioned date, I had no opportunity of exhibiting the camphor and hyoscyamus in cases such as I could have wished; but for these few days past, I have been employing it in the case of one individual with every apparent prospect of advantage; and, as I have no wish again to become my own patient for the purpose of acquiring farther confirmation of its usefulness, I shall continue to exhibit it to others, upon every suitable occasion, with hopes, and pretty strong confidence, of seeing it adopted shortly into general practice, and acquiring that share of attention from our profession, which, to me at least, its merits seem to demand.

For obvious reasons my name is not appended to this; but it shall be in your power to give every requisite information on the subject to any professional gentleman who may desire it.

EDINBURGH,
18*th August* 1826.

II. PRACTICE OF SURGERY.

Case of Aneurism at the Bend of the Arm, occasioned by Venesection. By Mr DALZIELL, Surgeon, R. N. Wigton. Communicated by Dr R. HAMILTON, F. R. S. E. Secretary to the Medico-Chirurgical Society of Edinburgh.

ON the 7th May 1825, I was requested to see Alexander Craighton, ætat. 57, seaman, belonging to the Clyde sloop. He has a large throbbing tumour, about the size of a lemon, on the inside of the arm, near the tendinous aponeurosis of the biceps, which made its appearance about three months since, soon after having been bled by a surgeon in Lancaster, in consequence of having had three of his ribs fractured. The pulse at the wrist is small and weak, and he complains of much pain over the whole arm, which is swelled and edematous. Previous to my seeing him, compression had been recommended by a neighbouring practitioner, but without producing any favourable change; and as it occasioned a considerable degree of pain, it was laid aside. Having advised him of the nature of the complaint, he was directed to live sparingly, bowels to be kept open, and the tumour to be covered with a loose wet bandage, until brought nearer to me, being at this time some distance from Wigton.

May 9th.—Tumour larger, thinner, and pulsating violently.

10th.—Came to Wigton, tumour very much enlarged all over the bend of the arm, with much edematous swelling; pain and numbness; pulse weak at the wrist, compared with the other arm, but throbbing so violently over the tumour as to move the whole arm; is restless and sleeps ill. ℥xij. of blood to be taken from the other arm, and to have infusum sennæ, e sulphate magnesiæ, and anodyne antimonial draught, at bedtime.

11th.—Limb rather easier, and not so much swelled or edematous. Continuentur medicamenta.

12th.—Arm easier, but at times very painful. Tumour pulsating violently, and very thin and discoloured, especially over the part in which he was bled.

13th.—To day, with the assistance of Messieurs Smith and Bruce, surgeons, I proceeded to secure the artery. The patient having been laid on a table, and the arm raised, a loose tourniquet was applied high up. I then made an incision between the inner edge of the biceps, and opposite sides of the triceps extensor cubiti, about two inches below the insertion of the deltoid, in order to avoid the superior and inferior collateral arteries (the ramus anastomaticus being too near the tumour), through the skin and cellular substance, about three inches in length. The fascia, which was very firm, was then carefully divided, keeping the fingers between the artery and the knife. After which, the dissection was cautiously proceeded in, until the artery was seen beating in its sheath. It was then raised, the wound being kept apart, by Hutchinson's finger instrument. The sheath was then slit open, the radial nerve which lay over the vessel being separated, and kept on one side. The artery was then separated from its connections for about half an inch; a bent silver probe was introduced beneath it, and a blunt curved needle passed with the double ligature. One was tied close to the connections of the vessel, with the cellular substance above, and the other in the same manner below. Having ascertained that the pulsation in the tumour had entirely ceased, The artery was then divided between the two ligatures, which were left out of the wound, exactly opposite their natural situation. The edges of the wound were brought together by adhesive plaster, and a roller applied. The patient bore the operation well, and not above two or three drachms of blood were lost. In two hours after, the heat of the arm was natural, but the pulse at the wrist could not be felt; in the other arm it was about 75.

14th.—Pulse this morning from 75 to 80. Had a dose of sulphate of magnesia, which operated gently. Arm of a natural heat, and the veins on the back of the hand distended; indistinct pulsation at the wrist, and none in the tumour; no pain; and swelling sensibly diminished. Repetatur sulphas magnesiæ.

15th.—Slept well during the night. Belly open; arm warm; no pain in the tumour, which is evidently decreasing; wound healing.

25th.—Has been doing well since last report. Wound nearly closed, except where the ligatures are, which are still adhering. The tumour very much diminished, and pulse at the wrist more distinct.

31st.—To day the ligatures came away. Pulse at the wrist distinct, but weak. Tumour still decreasing. From this time to the 29th June his recovery was progressive.

Dec. 2.—Has been at sea for the last three months, and felt little inconvenience; swelling about the size of a hazel nut, and movable like a small gland; has no pain in it, and moves his arm freely.

A Case of Necrosis, with some Physiological and Pathological Observations on the Organic Life of the Bones, &c. By ROBERT WISEMAN, Surgeon, Cupar Fife, and Secretary to the Fife Medico-Chirurgical Society.

ALTHOUGH the processes which nature adopts in the formation, and occasional regeneration, of the osseous system, have from time to time attracted the attention of many eminent physiologists, and have led to experimental inquiries which have considerably elucidated the subject, still it must be confessed, that, like almost every other matter connected with the science of the animal economy, much yet remains to be known, and that many of the supposed facts belonging to it are still legitimate objects of discussion. One might suppose, that, if ever we were to obtain a perfect theory of animal life, it would commence with the bones, as, in point of simplicity, they are situated on the confines of the system, and ought naturally to yield to our faculties, before the more elaborated and complicated actions of the other parts can be brought to their subjection. The bones are indeed in many respects peculiar,—they exhibit much less of diversity in their phenomena,—the stages of their development are more strikingly marked; and, upon the whole, we may perceive in them a nearer approach to the ordinary operations of physics, or the laws which regulate dead matter, than is generally to be traced in the minute actions of the other structures of the animal system. At the same time the similarity of their actions with those of the soft parts is sufficiently obvious;—they have a pathological as well as a physiological condition,—the same processes of assimilation and absorption are exemplified in both, and they exhibit every character calculated to identify them with the living parts of the system. I shall, in the present essay, briefly state a case of *necrosis*, and then take the liberty of submitting a few observations, partly suggested from it.

John Howie, a boy of a remarkably fine disposition, about 14 years of age, and of a somewhat strumous constitution, was, about the end of December last year, attacked with an inflammation in his right leg. He could give no very satisfactory account of the cause of it. Mrs Howie thought that he might have received some hurt on the evening preceding the attack, as he had been then out in the streets, contrary to orders, looking at a masonic procession. He, however, persists in denying his having been sensible of any injury received, and I have considerable confidence to place in his statement. As he is a boy of rather delicate habits, it is probable, however, that he might have caught cold on the occasion. The inflammation extended over the anterior part of the leg, exhibiting the appearance of phlegmonous erysipelas, or cellular inflammation, together with that of the skin. In spite of a rigorous antiphlogistic treatment, which was begun on the 4th day of the attack, when I first saw him, the vascular action was not subdued, and suppuration took place. The matter was repeatedly evacuated by the lancet, but not finding the discharge to subside, we enlarged the incisions, and discovered the tibia, rough, and deprived of its periosteum, at a point on its anterior part, about two-thirds up the leg, taking the measurement from the ankle to the knee. We hoped that the disease of the bone might be partial, and anxiously waited for an exfoliation; but no appearance of improvement, or of separation of the plates, being observable, the previous incision was again augmented, and the bone found rough as far round the circumference of the cylinder as could be conveniently reached. We detected, at the same time, a little beyond the upper end of the wound, near about where the epiphysis joins with the shaft at the knee joint, a small perforation of the bone, from which there was a discharge of pus, but so minute that its communications could not be traced. Conceiving that this might be the upper part of the exterior lamella in the course of separation, and that its other end was probably some way down the leg, it was resolved, in consultation, to extend the incision downwards in the line of the bone. This was accordingly done by commencing not far from its distal extremity, and the scalpel was run up to the original wound, directing it in its course firmly against the bone. I was surprised at the sensation which the scalpel communicated to the hand during the operation. In place of a firm smooth surface, which we anticipated to run the knife against, it felt as if drawn through something soft, like cartilage or gristle. As there was considerable hemorrhage, and the parts along the edges of the wound adherent to the bone, I filled the opening with lint, deferring a more particular examination till next day, when I was again surprised at finding it so much filled up, the bottom of it being already elevated about one-eighth of an inch above the surface of the bone, as seen at the junction with the original wound, and the semicartilaginous appearance was now very observable. In the mean time the aperture at the upper end of the bone was daily enlarging, and we removed a portion of the anterior walls adjacent to it, and found the cancelli and remains of the marrow, as was now expected, drenched in pus. Things remained in this state a considerable while; the cancelli gradually giving way, were from time to time scooped out, and various portions of the parietes detached with Hey's saw. From one of the cut edges of the

bone, at the upper part, a callous granulation began to sprout out, and rapidly increased; some small ones also shewed themselves, but the first continued most active, and made way with such vigour into the central part of the bone, which was now getting loose, and could be now moved a little backwards and forwards from both ends, that we were afraid it would completely lock it up, and prevent the possibility of its extraction. Various attempts were made for this purpose but without success; the common instruments, trephines, saws, &c. were found totally inapplicable. Our object was to cut the bone across, so that it might be pulled from either end and removed, as the discharge it kept up was of great extent. For this purpose it was now necessary to cut through the large granulation, which was cylindrical, and about a quarter of an inch in diameter. It being perfectly insensible, about half an inch was taken off from its lower end, and a speedy solution of the continuity of the bone was now easily effected. The instrument used for this purpose was similar to what the coopers call a scratching iron, which is a kind of cutting gouge, and acts, when drawn inwards, in place of requiring to be pushed like the common chisel. The bone was also softened, by having sponges wetted with acid carefully applied at proper intervals, so that the operation was not difficult to accomplish. The piece of the granulation removed appeared to possess considerable vascularity, as it bled a good deal; it had quite the appearance of cartilage, and gradually got firmer towards its centre, this part appearing to be the matrix of the new bone. The osseous fibres found in this situation ran longitudinally, and some cartilaginous bands proceeded from their extremities in the line of the mass. The pieces of the old bone taken out measured something more than five inches in length, and shewed the usual irregular appearance, from absorption, at both ends. They had an intolerable stench, precisely similar to the effluvia of human feces, as if they had been undergoing a process of digestion similar to that of the food in the alimentary canal. Since their removal the leg has been doing wonderfully well; the opening from which they were extracted is fast filling up, and the discharge has nearly ceased. It is needless to remark that splints and a tonic regimen have been used throughout.

Such are the outlines of a case, exhibiting what is generally acknowledged to be one of the most interesting processes of the animal economy, viz. the formation of a new bone to supply the place of one which had died in the service. How are the phenomena to be explained? Are we to resort to the archaeus of Van Helmont,—the anima of Stahl,—the stimulus of necessity of the justly celebrated John Hunter,—the vital principle of the school of Montpellier, and of the great Bichat [*]; or, lastly, to the organic instinct of the learned and elegant Dr Mason Good.

But, before proceeding farther, we beg to premise a few observations on the formation of the bones by the natural or accustomed processes. An accidental circumstance previous to the above case, suggested to me the probability of many of the phenomena of osseous growth being dependent on chemical action. I have since learned, from the perusal of Bostock's Elements of Physiology, that the idea is not peculiar, and any little mortification one might feel in the discovery of being anticipated in a hint of this nature, is more than compensated by the reflection of having thus come to a similar conclusion with such a respectable authority [†]. One of the most striking circumstances relative to the original formation of the bones, is the regular manner in which they begin to branch out from a centre. Let us examine the parietal bones for example. In the first stages of their ossific growth, we find that there obtains in this respect the most beautiful and perfect symmetry. At given points in the membranes, (the periosteum of this part which envelopes the embryo-brain, and which are probably determined by the situations naturally occupied by the arteries), the capillary vessels gradually enlarge, and ossific deposition takes place, probably from a chemical attraction which subsists between some of the elements of the part and of those of the blood. The first ossific particles being thus deposited, the growth proceeds regularly from them, diverging like the radii of a circle, until those of the opposite sides meet at the sutures, when they coalesce and embrace in the most cordial fellowship, for the performance of a common office, the protection of the brain. Now, we would ask, from what possible cause can such an arrangement take place, if not from an influence propagated from the centre? None of the ramified systems can be conceived to produce it without the most absurd complexity of action; but Nature generally works with the most simple means. We find the universe guided in this manner, and all its vast wonders comprehended almost in one word, GRAVITY, and we must not imagine that she would descend so far from the accustomed dignity of her conduct, as in the direction of our machine to produce such a frivolous complexity, when a single cause competent for all the purposes could be easily obtained. We are, therefore, I think, justified in saying, that the cause of this arrangement is connected with the first deposited earthy particles in the centre: these appear to exert on the other particles which are ready to combine, a disposing or determinating influence, and produce the deposition after the manner stated. There is another circumstance which I would take the liberty to notice, though probably more involved in the intricacies of animal action, as being like the modified effect of some general cause connected with the growth of this tissue. All the bones of the body, with the exception, perhaps, of the teeth, which are in some respects peculiar, have, in the centre of their substance, more or less of a fibrous texture, termed cancelli, diploe, spongy matter, &c. This substance is most advantageously exhibited in the centres of the long bones: Let us attend a little to their developement and structure. In the early part of their formation, they exhibit a gelatinous mass, which gradually becomes cartilaginous, and this again undergoing a change, is at length penetrated from given points with osseous matter. These points are situated near the middle of the shafts, about where the medullary arteries enter the bone. The deposition proceeds longitudinally along the periosteum in straight lines; but the circumference of the cartilaginous mass into which they shoot being greater at the extremities than the middle of the shaft, the matter will be disposed over a greater space, and in this manner, with some little modifications, give rise to the cancellated texture. That the periosteum possesses a great influence in the regeneration of bone, I feel considerably confident, notwithstanding the observations of Dr Knox to the contrary. I repeated for once the experiment of Macdonald and Troja, concerning which it is said, that the bone may be regenerated, although periosteum and all be removed. With me it was perfectly unsuccessful, and I feel no inclination to pursue the subject. The animal I used was a mouse, which at length poisoned itself by eating madder, a substance apparently very noxious to these animals.

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[*] In what follows, I use the word physics in the sense evidently understood by Bichat, as embracing all the corpuscular as well as mechanical actions of matter. This explanation seems necessary, as the same word is often employed by Bostock and others, as synonymous with chemical merely, opposed to mechanical action.

[†] While speaking of anticipations, we may notice, that, about eighteen months since, we suggested to two accoucheur friends here, a plan which has since been successfully practised by M. Mojou of Genoa, for making the uterus throw off the placenta by means of injections passed through the umbilical vein. But not having reduced to practice this aqueous flourish, we must submissively resign our claim to the honour in favour of the worthy operator.

I conceive the periosteum to be the boundary of the system of the bones,—to possess the natural elements of their formation; and, accordingly, we find, as we recede from it, in the healthy state of the parts, that they cease to be lamellated, and diminish in their substance into delicate fibres. We might conceive it also to determine their natural density. Take one of the more simple bones, for example, one of the round ones of the carpus, and let us conceive its periosteum to possess a given elementary constitution,—this constitution being specifick, will have, under specifick or healthy circumstances, specifick action.

Now, upon its capacity for growth, which will be also specifick and, on this action, will the future density of the bone depend: —diminish or increase the volume, and the strength of the bone will be proportionally affected.

The growth or life of a part may be conceived to depend on two kinds of actions; those interior situated in the part itself, and those at a distance from the part; the first are corpuscular or capillary; the second generally mechanical. These kinds of actions mutually influence each other. Thus we may excite the minute actions; and observe that they exert a kind of derivative influence on the blood; while they, in their turn, depend for their existence on this fluid. The derivative actions may be so obscure in a part as to be incapable, of themselves, of sustaining its life, which may depend for existence on some connection with another part. This we see exemplified in the teeth and alveolar processes. When the teeth of an adult are extracted, these processes are afterwards speedily removed, and no doubt Stahl would admire how attentive his *anima* is on the occasion of this work, seeing the parts are of no farther use; but we may perceive that the teeth, by their vitality, or by their friction, keep up the vitality of the parts; so that the sockets are the hangers on of their bounty; and, like other parasites, fall with their lords.

Perhaps since Mr J. Hunter's time, there has been a little too much said about the actions of the solids. If, by these actions, we are to understand strictly those of their capillary vessels, we will find them very limited indeed, and confined entirely to the single office of conveyance. Some have objected * to an independent capillary circulation, from the idea that any contraction of these vessels would as much retard as accelerate the progress of the fluid contained in them. It is certainly true, that simultaneous contraction of the coats of an univalve tube would have this effect; but if we suppose not a simultaneous, but a successively diminishing contraction, propagated from points or rather annular circumferences, and running in the course of the vessels, then the difficulty will vanish. But to return:—We ought to recollect, that there is a period in animal developement in which there are no solids; and if we put physiology so much under their supremacy, we will have a reign of causeless consequences. I had a good opportunity of observing the absorption of bone in the case which I have stated. That part of the dead bone which lay in contact with the callous granulations, was very speedily absorbed, while the other parts remained comparatively unchanged; but no one would suppose that the scarcely yet formed vessels of these parts performed this office. It was certainly not by any mere vascular power that it could be performed, and must be referred to a solvent power, which the fluids thrown out on its surface possessed. Besides, the peculiar smell it had, I think, confirms this view.. It does not follow as a pathological corollary, that the same structures will manifest a proportionate influence in disease as in health. It is true, that, in cases of simply increased or diminished actions, this will generally be the fact; but, in many diseases, the nature of the parts become completely changed. They take on a new vitality; what is for their individual good is no longer for the good of the system; and an open war is declared, which sometimes ends in the destruction of both. Nature, while she, in general, displays a wonderful harmony in her works, would appear, in the animal economy, to present us with particular rather than general lessons of beneficence. She shews more ingenuity in manufacturing the weapons of defence than in implanting the dispositions of peace. One being is occasionally destined to move within the sphere of another; and, in the morbid growth to which we have alluded, she would, in her mysterious dispensations, appear to strike up the standard of rebellion in the very centre of the system. A part, then, from particular causes, may change its vitality or mode of action; and health consists in the harmony of these modes in the different parts of the system. We find that many parts take on a mode similar to the osseous system; but the most frequent in this respect are those which approach it in their structures at some of the different periods of its growth; and it is remarkable that, wherever these changes occur, wherever there is phosphate of lime deposited, there are to be found traces of the linear arrangement peculiar to the tissue*. Nor does the regeneration of bone take place always in precisely the same circumstances. It may be regenerated from the periosteum, or from its own proper substance. (See Dr Knox's paper in Ed. Med. and Surg. Journ.)

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* See Parry's Pathology, p. 30.

In the case which I have narrated, I conceive it was partly from both; the granulations belonged to the latter, and the gristly matter covering the shaft, to the former class of these operations. When a bone is simply injured, the actions of its substance will be increased, and new ossific matter formed, as in fracture, &c.; but when it is killed, or dies from the violence of disease, if the periosteum remains entire, the whole blood, which used to supply the parts within, being now put at its disposal, the vessels enlarge, and the work of regeneration proceeds. The same arrangement of particles, as in the original case, is not to be looked for, as these were arranged by the slow and regular circumstances of healthy action; but an amorphous mass is moulded round the dead bone, and the solvents and absorbents ply their tasks, until it is eventually removed, or art relieves them from their labours. Had all the elements which enter the composition of animal bodies been possessed of strongly marked characters, it seems probable that one might have been able to appreciate their respective actions, and in some measure estimate the influence they severally possess in the movements of the machine: they are, in general, however, so delicate in their natures, and at the same time so excessively complicated in their relations, that any general attempt of this kind would prove entirely abortive. There is, however, I think, little doubt, but that the springs of all animal action reside in the physical elements of their respective machines. Bichat made a species of sensation the *primum mobile* of his system; but, besides the natural objections which one feels to so many *insensible* sensibilities ! as he continually has recourse to, there is still a necessity for some *backwork* for them to adhere in; and if we have his tissues for this purpose, why not let the phenomena follow their changes, rather than adopt a hypothetical intermedium ?

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* If one might judge from a plate, a very beautiful specimen of osseous crystallization occurred to Mr Syme. It is published in the last number of the Edin. Med. and Surg. Journ. *This principle of the crystallization of bone is developed at some length in the Review of our distinguished contemporary Dr J. Johnson, for January* 1826.—Edit.

The life of a part may be conceived to be a kind of mechanico-corpuscular action, having its spring partly from the affections of the molecules of its own mass, and partly from the actions of the heart and arteries. It appears to be the balance of many forces, and not the result of any particular principle. Mr Hunter's idea of life of the blood, is only so far correct, as this fluid makes one of the general elements. It has been said, that life is something which resists decomposition; but it resists it just as one chemical action resists another. An atom cannot tend two opposite ways at the same time. In death, life is decomposed, the circulation stops, the corpuscular actions cease, and the parts yield themselves to the next forces which are at hand. I conceive their physiology to be strictly a physical science, depending in its every link on physical agency; and, however obscure in many cases the actions may be, still we are bound to acknowledge their existence. So much have metaphysical ideas got hold of the minds of physiologists and pathologists, that, even with the best writers, we find the employment of the most vague language. Nothing, for example, is more frequent than the division of diseases into functional and organick. Now, if by organick disease, is understood every change of structure from a healthy state, and this is the obvious meaning of the terms,—could there possibly be any thing more unphilosophical? The words, insensible organic derangement, and sensible organic derangement, might, we think, be substituted with advantage; the former may be occasional, or constant; occasional when the cause is remote, and constant when it is immediate.

Dr Bostock draws the following distinction between the growth of minerals and animals, which, as it is something related to the subject, I shall take the liberty of quoting. (Elements, p. 71.) "Crystallization," says he, "consists merely in the opposition of particle to particle, by which the substance has its bulk increased, but without those parts that are already formed having their arrangement in any way altered or changed. The consequence of which is, that, if a crystal be broken into a number of parts, each part forms as perfect a crystal as the large one; and, on the contrary, if a small crystal be placed in a saline solution, where it may receive additional matter, the small crystal will differ from the larger one simply in its bulk. But this is not the case with a membrane or tendon. If we compare the corresponding parts in a young animal, and in one that is fully grown, we shall find that the latter is not merely increased in size, or has received an addition of new matter at its external surface, but that every individual part of it is of a different size, and is differently connected with the adjoining parts from what it was originally; so that it is demonstrable to the eye, that the small tendon could never have acquired the size of the large one, until the former had had all its particles gradually removed, and new particles deposited in their place."

This distinction is obviously rather in the mode than the kind of action. The growth of a part is so far a chemical effect, that it is the result of decompositions and compositions of the circulating fluids *. The accretion of a crystal is carried on at the surface, and is corpuscular in its action; that of a living part throughout its whole volume, and is intercorpuscular. Whether we unite oxygen and hydrogen together by volume, or effect the union by means of transmission through capillary tubes, it is obvious that the nature of the action is not altered by these arrangements. I would then say, that every physiological phenomenon is the production of a physical cause; the contrary appears to me to be equivalent to giving up the relation of cause and effect altogether. Through the whole constitution of nature we find a given quantity of phenomena to be the attendant of substances in a given state of existence, and every change of the substance, or its state, necessarily produces a change of the phenomena. Nor can we conceive any change of the phenomena without a corresponding change in the substance, or in its state of existence. We know nothing farther of the relation of cause and effect, than the simple fact of sequence. We can-

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* See a paper in the Ed. Med. and Sur. Journal by the late Dr Dewar, in which the analogy between chemical and vital action is very ably stated.

not say why this property should be attached to a substance rather than any other property. Contiguous attraction is no farther explicable than remote attraction, and neither of them can we affirm to be more necessarily attached to matter than sensibility, or any of the modes of feeling, &c. In the one case we find the property to be permanent, in the other occasional; and the legitimate inference is, that the latter are dependent upon conditions of matter. We know that these conditions are complicated: they embrace corpuscular and mechanical actions among a variety of elements, and we infer that peculiar phenomena must have peculiar actions, or elements, or both. The elements, exemplified in the different tissues, are so far tangible; the actions are generally obscure, but the only thing essential to them is *change of state.* Now, corpuscular changes of state may be conceived as of two kinds: 1*st*, Where the atoms tend to a permanent alteration; and, 2*d*, Where they recover their conditions. As the first class of changes which includes chemical affinity, &c. &c. are nearly infinite, it is obvious that those of the second may also admit of great variety. If we strike one end of a piece of wood, it transmits, with inconceivable velocity, a corpuscular impulse to the other end, so as to make both ends, however distant they may be situated, move almost at the same instant of time. A similar thing happens with other bodies, but, of course, differing according to the constitution of each. In some an intermediate vibration may be perceived; in others the ultimate effects are only visible, although it is demonstrable, that the impulse must have been transmitted by means of intercorpuscular action. In this manner we may perhaps form some faint idea of nervous action, in transmitting impressions, &c.; and that it is a specifick action of this kind rather than an impelled fluid, receives a considerable degree of probability from the shrewd remark of Mr John Hunter. "Nothing material," said he, "is conveyed from the brain by the nerves, nor *vice versa* from the body to the brain; for if that was exactly the case, it would not be necessary for the nerves to be of the same materials with the brain; but as we find the nerves of the same materials, it is a presumptive proof that they only continue the same action which they receive at either end." It is obvious, then, that in accounting for the phenomena of the nervous system, all that is necessary is to have a succession of changes, forming peculiar conditions. It is not to he supposed that these conditions have any resemblance to the phenomena, for, as before remarked, we know of no necessary, or peculiarly intimate, relation between effects and their causes. So far as regards the human understanding, this is a connection purely arbitrary, and learned only from experience; but from an experience so completely universal, as to render it the basis of the whole system of inductive philosophy

The changes which take place in the brain, for example, have just thus far a relation to the phenomena of mind, viz. that they always precede them, so that a peculiar state attends each phenomenon; but, like our sensations and their prototypes, they are perfectly distinct from each other.

CUPAR,
17*th August* 1826.

Observations on a peculiar modification of Sore Throat which occasionally affects Children. By JAMES HAMILTON *junior*, M. D. Professor of Medicine and Midwifery, and the Diseases of Women and Children, in the University of Edinburgh.

IN the last edition of the Hints for the Treatment of the Principal Diseases of Infancy and Childhood, the following brief notice of an affection of the throat is inserted :—

"There is a very dangerous, but fortunately rare, modification of sore throat, which begins in the form of a whitish spot, like that of thrush (though more definite in its shape, being round or oval), on one or both tonsils, unaccompanied at first by fever, and attended with only a trifling degree of uneasiness in swallowing. By and by this spot enlarges, its edges become of a florid colour; fever steals on; and the act of swallowing grows painful. A slough gradually forms, with evident ulceration at its edges; the fever increases; and headache and restlessness supervene.

"The partial separation of the slough, together with the rosy colour of the edges of the ulcer, with the moderate degree of fever for some days, promise a favourable issue. But very unexpectedly slowness of breathing, without either difficulty or wheezing, takes place, with excessive and sudden sinking of the living powers; and it generally happens, that, within a day from this change, the fatal event takes place. The breathing at first falls to eighteen respirations in the minute; then to sixteen; to twelve; and finally to ten or eight. Sometimes, with the sloughing, the tonsil swells; and, in some cases, both tonsils are affected.

"Hitherto, with one exception, this disease has proved mortal in every case in which the author has been consulted; and he considers the slow breathing to be a sure symptom of the fatal termination.

"With respect to the nature of the disease, his experience is too limited to enable him to give a decided opinion. He has repeatedly known two individuals of the same family attacked in succession with the disease; but he does not feel warranted in pronouncing it to be infectious.

"It is with feelings of sincere regret, that he has to state, that no mode of treatment, yet discovered, seems to have any influence in checking the progress of this disease. The most powerful local applications, such as stimulating gargles, the use of caustic, &c. and all the ordinary means of supporting the strength, have, in the cases to which the author was called, been pursued with much anxiety and activity, without any benefit. The operation of opening the windpipe, was, in one interesting case, where, from the swelling of both tonsils, there was apparently a mechanical obstruction to the breathing, had recourse to without any avail."

Further experience has convinced the author of these remarks, that two other symptoms occasionally attend the disease. The one is a most offensive fetor of the breath, and the other is the sudden occurrence of cynanche trachealis. The former of those symptoms has not been perceptible in the cases he has attended, or on which he has been consulted, sooner than from the sixth to the ninth day after the disease had been distinctly marked; and the latter has hitherto occurred before the sixth day.

Thus this very curious affection proves fatal in two different ways, viz. by exciting cynanche trachealis, or by inducing slow breathing and progressive sinking of the living powers, and in repeated instances these two different terminations have occurred in the same family.

There can be no difficulty in understanding the former of those symptoms, for it is evident that the local inflammation of the tonsils and uvulæ is, in such cases, extended to the larynx, after having affected the pharynx.

But the other, and as far as the author's personal observation warrants him to believe, the more common termination, does not admit of such a ready explanation. The partial separation of the slough, the rosy colour of the edges of the ulcer, and the moderate degree of fever, make the slow breathing, which suddenly supervenes, very unexpected to the attendants; and the rapidity with which death follows the slowness of breathing has appeared quite wonderful. The explanation which occurs to the author is, that the matter secreted by the ulcer being evidently of the nature of a morbid poison, may act, by paralyzing or otherwise influencing the par vagum, or the branches of the eighth pair of nerves of the medulla oblongata, on which Le Gallois has proved, by direct experiment, that breathing depends.

This effect of morbid animal poisons upon the human body, has not been sufficiently attended to by the profession, although the experiments of Fontana, Orfila, and Brodie are so striking and conclusive, that, to a reflecting mind, the analogy could scarcely be overlooked. If a morbid poison, generated in the system of one species of animals when applied to another species, produces certain deleterious effects, it might be reasonably inferred, that a morbid poison, produced by disease in any individual, should excite injury, more or less, in the person of that individual.

It has been commonly supposed that the morbid animal poisons, on the application of which certain diseases follow, such as the noxious matter producing (in the common language of mankind) itch, syphilis, smallpox, measles, plague, &c. have the effect of altering the nature of the circulating mass rather than of influencing the nervous system. But the venom of certain snakes, and the juice of certain vegetables growing within the tropics, appear to act directly on the nerves, and the phenomena of typhus sanction the notion that the miasm, which excites that disease, also acts upon the nervous system.

In the fatal cases of cynanche maligna, where croup does not precede death, the sinking of the living powers is probably owing to absorption of the matter of the ulcer of the throat, though, in such cases, there are not the same slowness of breathing, and other marks of direct influence upon the respiratory nerves, which are so evident in the modification of sore throat here alluded to.

That there are certain morbid secretions, such as the matter of scrofula and of cancer, which have only a local effect, must indeed be conceded; and this fact being quite familiar to practitioners, has led them to overlook all those cases where diseased secretions do not produce a sudden and striking influence upon the system.

The author was first led to attend to this subject from what he observed in cases of polypus uteri. In many such cases there are symptoms of broken health, such as great prostration of strength and edematous swellings, although there had been no hemorrhage, there having been merely an apparently trifling ichorous discharge per vaginam. He found, that, on removing the polypus, in general the discharge ceased, and the health was rapidly restored. For many years he could not account for those circumstances, but, at last, a case occurred where the medical attendants were induced to delay the operation, and where the patient suddenly sunk a few days after the consultation, and the appearances on dissection elucidated at once the nature of the cases which had puzzled him. All the viscera seemed perfectly sound, and from the quantity of fat on the abdominal muscles, and from other circumstances, it might have been considered that the patient had been in good general health, and had died from some sudden accident. But an ulceration, not above a quarter of an inch in breadth, was discovered surrounding the root of the peduncle by which the polypus was attached to the uterus; and it was concluded that the matter of this ulceration had been absorbed, and had acted as an animal poison.

Perhaps two other cases of polypus uteri, which have fallen under the author's notice, may be deemed as further elucidating this matter. The subject of the first was a very stout woman, of middle age, who was several years ago brought into the servant's ward of the Royal Infirmary, in consequence of the sudden protrusion of a double headed polypous excrescence of the uterus. The late Dr Wardrope applied a ligature with great dexterity, and the tumour dropped in the course of four or five days. The woman seemed to be doing well on the following day, but forty-eight hours afterward she was found labouring under peritoneal inflammation; and, notwithstanding every means, she died within two days. On opening the body, although the uterus was evidently thickened and enlarged, no connexion whatever between the inflammation of the peritoneal coat and the state of the uterus could be discovered.

Several years after that case, a still more remarkable one occurred. An individual, about the forty-fifth year of her age, of rather a delicate habit, was discovered to have polypous excrescence of the uterus, and a ligature was immediately applied. The tumour dropped on the fourth day after the operation. The next day the patient took a dose of castor oil early in the morning; and as it did not operate within the time she expected, she had recourse to a cupful of the infusion of senna. This was soon followed by griping and violent pain of the belly. She was then for the first time seen by her ordinary medical attendant, who, finding that the pain was aggravated by pressure, immediately subtracted about twenty ounces of blood. Oppressed breathing, and great rapidity and feebleness of pulse quickly succeeded, and she sunk within a few hours. In both those cases, it cannot be doubted that there must have been a state of the system different from the healthy condition; and it is highly probable that it was the effect of the previous absorption of vitiated matter.

There is another disease, which perhaps affords a further illustration of the effects of the absorption of morbid animal fluids. In some cases, where abscesses about the hip-joint had been opened naturally or artificially in the thigh, and where, from four to eight ounces of pus had, for a considerable time, been discharged daily, purulent diarrhea has suddenly supervened, accompanied, at the same time, with a most remarkable diminution of the discharge from the abscess. Sometimes those changes have been so sudden, that they have happened within a few hours.

To a superficial observer it would at first appear, that the abscess had burst into the gut, but both the phenomena during life, and the appearances on dissection after death, contradict this, for sometimes days intervene without any purulent discharge by stool; and, on dissection, no direct communication between the abscesses and the gut has been traced.

Another, and it is believed a pretty commonly received, conjecture is, that the matter is transferred by absorption from the cavity of the abscess to the intestinal tube. But if it be meant that the matter is taken up by the mouths of the numerous lymphatics which open upon the surface of the abscess, and is then deposited in the intestinal canal, the opinion cannot stand the test of inquiry. For the lymphatics must convey the fluid into the general mass of blood, and hence it must be believed that the purulent matter, after this admixture, is again separated and collected within the gut. As far as experience and observation go, there is no such process, for blood drawn from persons labouring under abscesses has never been seen to contain purulent matter.

Is it not more reasonable to suppose that there is a very partial absorption of the matter of the abscess, which excites, through the medium of the nerves, a diseased action on the surface of the intestinal canal?

If the reasoning thus offered be correct, it should follow, that, in all cases of ulceration on surfaces communicating with the respiratory nerves, the physician, in the treatment of the disease, should, by the most vigorous efforts, endeavour to accomplish two objects, viz. to prevent the extension of the local inflammation, and to lessen the diseased secretion.

The former indication seems, at first sight, the more important one in the particular and curious disease now under consideration; for it appears, for some time after the attack, to be merely a local affection. Accordingly, means calculated to fulfil this intention were suggested, and pursued with great energy, in all the cases till lately to which the author was called. He was, however, mortified to find, that neither the application of leeches, followed up by purgatives and blisters, nor the use of topical stimulants, such as the various irritating gargles, the application of the nitrate of silver, and even scarifications, proved in the slightest degree beneficial. He was resolved, therefore, to take the first opportunity of ascertaining the efficacy of attending principally to the second indication: that opportunity has lately occurred, and he now communicates the result of the experiment.

On Tuesday, June 27. 1826, he was requested by Dr Torrance (an old pupil) to visit a little boy, aged six years, labouring under a modification of sore throat which appeared to Dr Torrance to be of a singular character. The Doctor stated, that this was the third child in the family who had become affected with the disease. The first of these was a girl, nine years old, still alive, but apparently sinking. She had been ill since the 12th day of June; and, ten days after her attack, her brother, aged four years, was seized with the same symptoms; and, after a certain progress, cynanche trachealis supervened, and proved fatal on the 26th of June; so that this little boy was only four days ill.

Before visiting the patient, the description contained in the last edition of the Hints for the Management of Infants and Children, was put into Dr Torrance's hands, and he immediately declared that it applied most accurately and minutely to the cases he had been attending, with a single exception, viz. that the excessive fetor from the ulceration of the throat was not specified in the printed description.

When the state of the little boy was examined, the slough upon each tonsil, larger upon the right than on the left, with a slight swelling of the velum, was strongly marked, but there was no fever. It was ascertained that the first symptom of indisposition had been discovered on the preceding morning, and that he had been treated with great activity, having had a dose of calomel and jalap, which had operated both upwards and downwards, and having had leeches applied externally to the throat. Besides the attendance of Dr Torrance, the little patient had the benefit of the assistance of two intelligent young gentlemen studying medicine, who lodged in the house, and they, by the by, cordially concurred with Dr Torrance in bearing testimony to the accuracy of the coincidence between the printed description of the disease, and the progress of the symptoms in the children they had attended. The state of the little girl was desperate, and she sunk on the 30th of June.

Agreeably to the views already explained, it was suggested that the great object to be aimed at should be to lessen the diseased secretion from the throat, and with this intention the sulphate of quinine in as large doses as could be administered was prescribed. At the end of twenty-four hours it was found, however, that this medicine could not be retained, or rather perhaps could not be received in sufficient doses; and as the ulceration was increasing, and fever was stealing on, it became necessary to change the medicine without altering the indication.

Adverting to the extraordinary efficacy of the sugar of lead in restraining passive hemorrhagy, and in lessening secretions depending upon laxity of fibre, it was judged that this medicine might answer the purpose in view, and at any rate that it merited a fair trial. Eight grains dissolved in eight ounces of rose water, to which forty drops of tinctura opii were added, were therefore prescribed, and of this half an ounce was directed to be given every three hours while awake. Instead of the stimulant gargle hitherto employed, consisting of capsicum, &c. a solution of the sugar of lead, of the strength of a scruple to eight ounces of distilled water, was substituted. A dose of castor oil was directed to be given every second morning.

Under this treatment, from which no inconvenience whatever was experienced, the sloughs gradually contracted, and the swelling of the velum pendulum palati progressively decreased, in the course of which it was discovered that the ulceration had extended over the pharynx behind the velum, and the cure was completed on the 16th of July. The medicine was begun on the 28th of June, and was continued till the 14th of July, occasionally diminishing and increasing the intervals between the doses. The whole quantity of the acetate taken during that time was twenty-four grains.

From the cases of this disease which have fallen under the author's notice, he is now inclined to believe that it is infectious. While he has repeatedly seen two children in one family attacked in succession with the disease, he has only known one instance where, in a family of several children, it was confined to a single individual.—He may add, that, in so alarming and fatal a malady, he considers it the duty of a physician to hold out that it is infectious, and to enforce all the ordinary precautionary measures to prevent its spreading, even although certain doubts of its infectious nature might impress his own mind.

The remarks in the preceding pages are offered in illustration of a general principle applicable to cases of morbid ulceration, which an intelligent practitioner can modify according to the individual instances falling under his charge.

That remedies must be adapted not only to the particular constitutions of the patients, but also to the complications and the degrees of severity of the symptoms, is a proposition generally assented to, but not always acted upon; and yet it is in this art that the talents of an active and intelligent practitioner are chiefly conspicuous. This consideration should lead every physician to avoid forming a prejudice in favour of one or two drugs for the cure of particular diseases. Thus, in some cases of the disease now under notice, the sulphate of quinine or of zinc, or the ammoniarate of copper, or some of the oxides of iron, or the mineral or vegetable acids with wine, or even some of the preparations of mercury*, may be preferable to the sugar of lead; but the facility and safety with which that latter medicine can be given, makes it a most convenient prescription for children. In cases of cynanche maligna, a gargle, composed of a solution of this medicine, might probably be substituted, with much advantage, for the stimulants hitherto employed.

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* In the only case of cynanche trachealis supervening to the cynanche maligna, which the author has seen terminate favourably, the boy (four years old) had a dose of calomel every hour while the symptoms continued violent, and, at the same time, was allowed wine in large quantities.

In recommending the internal use of the acetate of lead, the author is well aware that there are many prejudices in this part of the world against this medicine. Dr Duncan junior, in his 7th edition of the Edinburgh Dispensatory, p. 454, says, "The internal use of the acetate of lead, notwithstanding the encomiums some have been rash enough to bestow upon it, is entirely to be rejected." In his last edition of the same work, he has, however, withdrawn this interdict. He says, "The internal use of the acetate of lead is to be resorted to only under urgent circumstances, and with great caution." Two practitioners of deserved eminence in public estimation, concur in recommending a less cautious use of this remedy.

Dr Parr, in his Medical Dictionary, vol. i. p. 729, says, "Dr Reynolds's courage has been extolled in ordering a grain of acetate of lead in a single dose. Five times that quantity may be given twice a day for some days, interposing only an oily laxative every other day. We have often employed it in hemorrhagies, sometimes with success; but it is certainly inferior in its sedative effects to nitre." In a communication to the author, some time after the publication of the Medical Dictionary, Dr Parr assured him, that further experience had convinced him, that, in all cases of passive hemorrhagy, the internal use of the acetate of lead is the most powerful medicine that can be employed; and it was on this assurance that the author has had recourse to it in such cases; and he can confidently affirm that he has never seen any injurious effects from its use.

Again, Dr Jackson, whose opportunities of extensive observation in the most dangerous diseases are well known, states (in a recent publication, p. 151), that, in certain alarming febrile affections, "if the tongue be rough, dry and red, or smooth, red and dry, especially as accompanied with thirst, and sensations of distressed stomach, a solution of sugar of lead, viz. seven grains dissolved with forty grains of crystals of tartar in one quart of water, and given to the amount of two ounces every second or third hour, is singularly useful in allaying heat, in diminishing the irritability of the interior surfaces, and in thereby enabling the stomach to retain whatever may be thrown into it."

The author has never given this medicine without combining it with an opiate; and although he commonly prescribes a dose of castor oil to be exhibited every second day, yet he has been occasionally obliged to deviate from this rule, in consequence of the prejudices of his patients, and he has found other kinds of laxatives equally useful. But some professional friends, on whose veracity he can depend, have assured him, that they have seen the acetate of lead taken in considerable doses, without being combined with an opiate, and without that strict attention to the ’ate of the bowels which he supposes to be so necessary.

After the preceding pages were written, his friend Dr Abercrombie pointed out to the author an account of the observations of Dr Bretonneau of Tours, on a disease which bears some analogy to that modification of the malady which terminates in cynanche trachealis. Mons. Bretonneau calls the disease *la diphtherite*, from the membrane which forms on the diseased part, and which destroys life by closing the passage of the lungs. He asserts that there is no ulceration of the tonsils, nor of the pharynx, even in cases of cynanche maligna. There is merely an exudation, which concreting, forms a membrane, of more or less thickness and tenacity; and he expressly says, that the scorbutic gangrene of the gums, the cynanche maligna, and the croup, are all of the same nature, or are only modifications of the same inflammatory disease, affecting different portions of the mucous membrane of the fauces.

But, in the disease which forms the subject of this paper, as well as in cynanche maligna, there can be no doubt of the ulceration of the throat; and it is therefore quite evident that the cases recorded by Bretonneau, were no other than various modifications of the cynanche trachealis.

A Case of Retroversion of the Uterus. Communicated by RICHARD WISE, M. D., Member of the Royal College of Surgeons, London, and now of Helston, Cornwall, to WILLIAM CAMPBELL, M. D., Fellow of the Royal College of Surgeons, and Lecturer on Midwifery, &c. Edinburgh.

DEAR SIR,

THE subjoined particulars of a very unusual and important case, were, during the summer of 1825, put into my hands in manuscript, by Dr Wise. Should you consider them, with some additional observations by myself, of sufficient interest to merit a place in your pages, you are at liberty to insert them. I am, Dear Sir, yours faithfully, WILLIAM CAMPBELL.

"Early in the month of March 1814, a person residing at a distance of about five miles from my house, called on me to request that I would attend his wife in her approaching accouchement, which was expected to happen in May. He observed, that she had been for several months the victim of much suffering, in consequence of some obstruction to the flow of urine.

"On the 12th I received a message to visit this woman, whose complaints were said to have been much aggravated during the two preceding days and nights, from pains resembling those of labour. I found her in a deplorable state,—hectic flushes pervaded the countenance, there was a hot dry skin, parched tongue, with excessive thirst, and great emaciation. The sacral extremities were edematous to a considerable extent, and so paralysed, that locomotive power was almost lost.

"I had not been long at her bed-side when a pain came on, and this was soon followed by another, which induced me to ascertain the state of the uterus. On attempting, in the usual manner, to introduce the index into the vagina at the frenum labiorum, the canal at this point seemed so completely closed up, as to induce me for a moment to think that there was some malformation of the external organs, and that a natural passage had never existed. When the finger, however, was carried upwards, almost to the top of the pubic arch, it could be advanced inwards between each *crus pubis* and *a body which seemed to fill up the pelvic cavity.* Continuing to insinuate my finger upwards and inwards, I at last pushed it so far behind the pubes as to reach the crest of this bone. At this point, the *os uteri* could be easily felt; it was dilated, moist, yielding, and directed upwards. I introduced the finger a little way within it, and distinctly felt the unruptured membranes, and a foot presenting. On examination per rectum, the head was satisfactorily distinguished through the intestinal and uterine parietes, low down in the pelvis, and completely occupying the hollow of the sacrum.

"After these discoveries, I felt satisfied in my own mind as to the nature of the case; but as it was, on the one hand, an affection of such unusual occurrence, and, on the other, so likely, from the prostrate state of the patient, to prove fatal, I desired the husband to request the assistance of another practitioner. In the mean time, a considerable quantity of urine was drawn off by the catheter; and an enema was administered, but without effect.

"I now proceeded to inquire into the history of this unfortunate patient. The poor woman was about thirty-five years of age, of lower stature than the generality of females, but otherwise well formed, and of a strong healthy constitution. This was her fourth pregnancy, and nothing remarkable occurred in her former labours. Between the third and fourth months of her present pregnancy, the flow of urine became obstructed, for which, during several days, she took a variety of nostrums, recommended to her by other females, without procuring any relief. In this state of matters, a surgeon, *residing at a distance of nine miles,* was consulted; he seldom visited her oftener than once a week, and drew off the urine when he came. There was a continual *stillicidium,* and she described her sufferings as having been of the most distressing nature.

"When the practitioner summoned by the patient's husband arrived, and convinced himself of the misplaced position of the uterus, immediate delivery was decided on. To accomplish this, the index of one hand was introduced into the os uteri to rupture the membranes, and two fingers of the other hand into the rectum, to make pressure upon the body of the uterus at different points, with a view to raise it out of the pelvis. When a considerable quantity of the *liquor amnii* had escaped, the fundus uteri was felt to yield to the pressure of the fingers, or to ascend through the brim, while the aperture of this organ was ascertained to be gradually descending into the pelvic cavity. By continuing the pressure on the fundus, the os uteri was, in a very short time, made to descend so far into the pelvis, that I could easily hook the presenting foot with my finger, which enabled me to use a considerable degree of extracting force, and to accomplish the delivery with unexpected celerity. The fetus was still-born, but it presented no appearance of putrefaction, nor was it smaller than the generality of children at the seventh month.

"After the extraction of the fetus, the patient expressed herself greatly relieved. She was ordered to have a little panada for nourishment, and to be kept quiet. The following morning a dose of castor oil was administered: it became necessary to repeat it in the evening, and it was followed by a copious evacuation of indurated feces. The lochia were scanty, and there was scarcely any milk secreted. Her febrile symptoms continued, debility increased, and she sunk on the fifteenth day after delivery."

Remarks.—In the foregoing detail, there is no circumstance particularized to which the *displacement of the uterus* can be ascribed. Of the predisposing causes enumerated by practical authors, the one chiefly concerned in this case, would seem to be, unusual capacity of the pelvis, since the patient, from the date of the accident until that of her delivery, had a continual *stillicidium*; and since, a few minutes previous to the extraction of the fetus, the introduction of the catheter was accomplished with facility; an operation which, in some instances, it has been found impossible to perform, even at so early a period of pregnancy as the fourth month *. Although it has not been thought worthy of remark, yet I am of opinion, that a preternatural position of the fetus, as in the case before us, and more especially when conjoined with a capacious pelvis, should be ranked among the predisposing causes. When the fetus is *thus situated*, it must diminish the equilibrium of the uterus, and tend to revolve its fundus backward towards the sacrum.

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* Lynn, Medical Observations and Inquiries, vol. v. p. 388.

In regard to the exciting causes, Dr Denman's explanation has very properly been considered satisfactory; for, that retroversion of the uterus is most generally occasioned by suffering the urinary bladder to become unusually distended, is a fact which has appeared quite obvious in a large majority of the cases that have been published. But, although displacement of the uterus must frequently be viewed as the effect of over accumulation in the bladder, doubtless the accident may also be produced by various other causes; and when it happens from any of these, retention of urine, as very properly remarked by Dr William Hunter, must be considered as an effect, and not as a cause, of retroversion. The displacement has, in many instances, been attributed to mental emotions, more particularly fear; and also to overexertion *.

Of these two causes, violent action of the abdominal muscles must be the one chiefly concerned,—fear can only be considered as predisposing to malposition. The depressing passions being invariably attended by general relaxation, any violent action of the abdominal muscles, especially when the bladder is overdistended, will, in all probability, produce retroversion.

It was at one time disputed, whether displacement of the uterus was brought about suddenly or slowly; but, in the present day, I suppose it will be admitted that the accident may happen in either of these ways. When, in a healthy female, during her first pregnancy, this kind of malposition occurs, whether from overaccumulation in the bladder or otherwise, its progress must be slow; for the unyielding condition of the ligaments and other *media*, by which the uterus is supported *in situ*, will prevent so great a change suddenly taking place in its position, as to permit the os and cervix to be raised above the symphysis pubis, and the fundus thrown downwards and backwards into the hollow of the sacrum. Retroversion, when attended with stillicidium, is also retarded in its progress.

In females of a relaxed habit of body, and in those individuals who have had a large family, we can have no difficulty in believing that malposition of the uterus may be very suddenly produced by any kind of exercise, calculated to excite violent action of the abdominal muscles, such as severe straining to accomplish the exoneration of the intestines, and lifting heavy bodies. Under these circumstances, sudden change of position can be accounted for upon the principle of the uterus and its attachments, from the relaxed state of the latter, being thrown backwards with facility under the pressure of the superincumbent viscera.

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* Med. Observ. and Inquiries, vol. v. p. 104-10 and 378. Also Med. Comment. vol. vi. p. 215-17.

Retroversion has generally been observed to happen between the third and fourth months of pregnancy, as very properly noticed by Dr Wise, in the foregoing case, and mentioned by other gentlemen, in the examples which they have published. By almost every author it is also allowed to take place at a much later period. In Smellie's works *, and in Dr Merriman's essay on this subject, cases are related which occurred at the close of the fifth month. Of the latter case I have heard it asserted, that it was "a quiz on the profession, as displacement could never happen, except when the patient was between the third and fourth month." If by this it is meant to assert, that retroversion can only occur while the uterus is in the pelvis, I should consider this point to have been fully agreed upon by every practitioner, from the time the first case of the kind was related; so that this discovery, independent of its being stale, is, in fact, no discovery at all.

As this change of position can only happen while the uterus is in the pelvis, it may be asked: How long is it likely to continue in this situation? This will depend upon the capacity of the pelvis, the proportion of liquor amnii, and the size of the fetus. Where the fetus is large, or the pelvis small, the uterus will slip out of this cavity earlier than if the pelvis were capacious, and the fetus merely of the ordinary volume. It is a very general observation in practice, that some females quicken when they are only three months and a half pregnant, while others are not sensible of the motions of the fetus until towards the close of the fifth month,—a proof that the residence of the gravid uterus *in pelve* is not of the same duration in every female. In the capacity of the pelvis the greatest variety may be observed. I have seen one, where, after the removal of its linings, the lateral diameter was 6¾ inches in length. The wife of a soldier, belonging to the 5th Dragoon Guards, applied to me in the early part of October 1825, when within three days of having completed her fifth month of pregnancy. Her pelvis was so large as to permit the uterus to the size of a florentine flask to be protruded *extra vulvam*; it occasioned no inconvenience in voiding the urine or feces; and she could return it *ad libitum*, by the mere application of the hand. In such cases, it would require a degree of logical reasoning, of more than ordinary cogency, to convince us that the uterus could not be retroverted at a much later period than the fourth month.

The sudden obstruction to the exoneration of the intestines, and the almost complete and sudden retention of urine, with the severe pain in the region of the sacrum, and bearing down efforts, which may be viewed as the pathognomonic symptoms of retroversion, should enable a practitioner of ordinary acquirements to determine at once the state of his patient. When an attempt is made to examine per vaginam, the partial or complete occupation of this canal by a tumour, which, when freely pressed by the finger, conveys a feeling of solidity and an irregularity of surface, the obstruction to the advance of the finger into the pelvis, the absence of the os uteri from its natural situation, and the ability of the patient to evacuate the bladder when the pelvic tumour is pressed towards the sacrum, should remove any existing doubts as to the nature of the case. In the *Dictionnaire des Sciences Medicales*, under the head of Retroversion, a case of this nature is related, on the authority of the distinguished Baudelocque, where the surgeon called in considered the pelvic tumour to be a polypus. Upon this supposition, an attempt was made to cause it to protrude beyond the pudendum, that it might be noosed. The practitioner, however, being unsuccessful in his efforts, he fixed a crotchet into it, which occasioned so alarming a hemorrhage, that he fled, and left the patient to her fate. Another was sent for, who effected the reposition of the uterus, and the patient went on to the full time, without any accident. When labour supervened, the point on which the crotchet had been formerly fixed would not dilate, from its having contracted an adhesion with the vagina, so that it was deemed necessary to perform the cesarean section per vaginam.

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* Smellie, vol. i. p. 149.

The termination of retroversion is various, but fortunately, that, in reposition of the uterus, and retention of the ovum, until the completion of gestation, is the most frequent, as may be seen by consulting foreign and domestic authors *. In some rare instances, the uterus continues in a state of malposition, until the latter months, as in the case communicated by Dr Wise, or until the term of pregnancy is completed †. This fact has not been called in question, except by a solitary individual, who pertinaciously denies the possibility of the uterus continuing in a state of retroversion during the latter months. No doubt, one person may be more accurate in his observations than another; but when he exceeds all others in point of accuracy, some of equal, and others of greater, eminence than himself, his accuracy must be viewed as inaccuracy. Where the uterus continues misplaced until the term of pregnancy is far advanced, or even completed, and when labour comes on, a dead fetus may be expelled, *per vias naturales*, with safety to the parent ‡, or the uterus may be ruptured by its own violent action, and its contents escape into the abdominal cavity, whence, at some distant period, when the patient survives the accident, they are all discharged at various points, and considered as the sequelae of an extra uterine conception. Other cases terminate by inflammation and gangrene of the urinary bladder [*]. Sometimes the patient sinks soon after delivery, in consequence of long continued irritation and hectic, as appears to have happened in Dr Wise's case.

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* London Med. Obs. Inq. vols. iv. and v. Dictionnaire des Sciences Medicales. Med. Comment. Ed. Lond. Med. Journal, vol. xi. p. 380.

† Dr Merriman's Essay on Retroversion of the Uterus.

‡ London Med. Journal, vols. ii. and xi. Med. Obs. Inq. vol. iii. Memoirs Med. Society Lond. vol. iii. Med. Comment. Ed. vol. xx. p. 254.

The general result of these cases has been such as to justify us in concluding, that, when we are called early, and the bladder can be easily evacuated, a favourable termination may be expected. Even when the patient is in the latter months, before the displacement has been discovered, if she can void the urine with facility, or if the catheter can be easily passed, our opinion may be favourable with regard to her, but the fetus may be lost, as in the case which heads these remarks [†]. When the catheter cannot be introduced, the situation of the sufferer is a precarious one.

In these latter circumstances, it has been proposed to relieve the patient in three ways; first, by puncturing the bladder; secondly, by performing the section of the pubes; and, thirdly, by piercing the uterus. The evacuation of the urine, by whatever steps it may be accomplished, whether by the trocar or the catheter, seems, from certain circumstances in some of the cases to which I have already referred, *to be all that is required, to enable the uterus, in far the majority of instances, to resume its natural position.* In the volume of the London Medical Journal formerly quoted, a case is detailed, where, from its history, no one can doubt that the uterus was in a state of malposition for a month; yet, in this situation, and after the removal of 13 quarts of urine at two different operations, reposition took place soon after the catheter was used for the second time [‡]. In another periodical work, a case is recorded, where five pints of urine were removed, by puncturing the bladder in the *linea alba, about two inches above the pubes;* and reposition happened the day succeeding the operation [§]. The object in puncturing the uterus is to permit the liquor amnii to escape, that the volume of the misplaced organ may be diminished, and that it may ascend through the brim with greater facility. By the separation of the symphysis pubis, it was intended to enlarge the brim, with a view to favour the ascent of the uterus.

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[*] London Med. Fact. Obs. vol. viii. p. 32. Ed. Med. Annal, iv. p. 284.

[†] Merriman on Retroversion, from p. 26 to 37.

[‡] Ed. Med. Comment. vol. vi. p. 215-17.

[§] Medical Communications, Lond. vol. ii. p. 6.

With regard to the comparative merit of these three expedients, the preference must certainly be given to puncturing the bladder. This mode of relief was first proposed by Lynn *, and not by Sabatier, as incorrectly stated in the Dictionnaire des Sciences Medicales. The operation does not endanger life, either in the unimpregnated or gravid state; nor, in the latter, has it been succeeded by abortion. Puncturing the uterus also suggested by Lynn †, although repeatedly practised with success, must nevertheless be allowed to be attended with considerable danger to the parent, and to be invariably followed by the expulsion of the ovum,—thus involving two or more lives. Although, from the concurrent experience of some eminent practitioners, we may take it for granted that the subtraction of the urine will be very generally followed by reposition of the uterus, yet I will not hesitate to declare, that cases may occasionally occur where this might not succeed, and where it would be indispensable to push the trocar into the uterus instead of the bladder. Where the uterus has been allowed to remain in a state of malposition so long as to acquire such an increase of volume that it cannot, even after the urine has been removed, be raised out of the pelvic cavity; while, as in Dr Wise's case, there is edema of the sacral extremities, with other serious marks of constitutional derangement, I would not hesitate to puncture the uterus. In Mr Wall's case, which, in this country, gave rise to the first public lecture on the subject, although the retroversion was discovered when the patient was only four months pregnant, yet, so firmly was the uterus impacted in the pelvis, that it could not be drawn out of it, even after the abdomen was laid open, until the bones of the pubes were previously separated. In Dr Wise's case, on the other hand, no sooner was the liquor amnii suffered to escape by the bursting of the membranes, than, by the aid of cautious efforts, the uterus resumed its natural position, although the patient was seven months pregnant. From these latter remarks, it is obvious, that a case may occur where the patient may require to have both the bladder and uterus punctured.

To secure the uterus from injurious pressure during its reduction, and therefore to prevent abortion, it has been proposed to perform the Cigaultean operation. No proposition could betray a greater degree of ignorance on the part of any individual regarding the condition of the female system during pregnancy, than this. The section of the pubes may assist the efforts of the practitioner in restoring the uterus to its proper position; but, so far from preventing abortion, it will assuredly

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* Med. Obs. Inq. vol. iv. p. 395.

† Dictionnaire des Sciences Medicales.

produce it. In fact, as may be seen by the following quotation from a faithful author, this doctrine inculcates that we are to entail lasting misery upon the parent, if not ensure her destruction, for the preservation, perhaps, of a monster; or a fetus, the duration of whose life might not be many days or weeks: "Le délabrement des parties extérieures et du col de la matrice, l'inflammation et la gangrene de ce viscere, un depôt de matieres purulentes, sanieuses et putrides dans le tissu cellulaire de la fosse iliaque gauche, et du muscle psoas; la hernie de la vessie entre les os pubis, l'écchimose qui régnoit le long du muscle psoas droit, &c., que l'ouverture du cadavre de cette femme a fait remarquer: la lesion du canal de l'uretre, et l'incontinence d'urine chez d'autres femmes, forment le tableau de tous les accidens dont cette nouvelle operation est susceptible*." The section of the pubes, independently of the deplorable consequences above stated, has in many instances been followed by permanent lameness of the sacral extremities, from reunion of the disunited symphyses having never afterwards taken place. "J'ai aidé, en 1798, le Professeur Alphonse Leroy, dans cette operation sur une dame dont le bassin étoit trop étroit, et elle en restoit près de six ans incommodée, au point de ne marcher que très difficilement. Je ne crois pas même qu'elle soit encore retablie †." It cannot, therefore, be considered any great stretch of imagination to suppose, that this operation would also be followed by abortion. It was first proposed, *under the present circumstances*, by Professor Purcell of Dublin, who must have borrowed the idea from Cigault of France, if not from Dr Hunter, owing to the steps which the latter gentleman found it necessary to adopt in the dissection of Mr Wall's patient. What was at one time, however, a mere proposal, has at last become a precept; for, Dr Gardien of Paris, in his excellent system, recommends the section of the pubes with as much deliberation as if he were speaking from experience ‡. But I have no hesitation in declaring, that *it cannot be required in retroversio uteri*; in confirmation of which I have to remark, that M. Gardien, who is its strongest advocate, has not brought forward a single solid argument in favour of it.

Previous to the most salutary of the foregoing operations being thought of, *persevering*, but *cautious*, attempts should be pursued, to accomplish the reduction of the uterus. On a perusal of some of the cases to which I have referred, it will be found, that reposition was effected after reiterated trials, and even after the lapse of many days from the discovery of the existence of retroversion. The unfavourable result in the practice of Wall and Lynn will prove the necessity of being cautious; for no one can read their statements, without being impressed with the idea that serious injury must have been done to their patients, by repeated and powerful efforts to reduce the uterus.

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* Baudelocque, Art des Accouchemens, vol. ii. p. 277.

† Nauche sur les Maladies de l'Uterus, p. 111. Paris, 1816.

‡ Traité d'Accouchmens, vol. i. p. 197.

The subtraction of the urine should be the primary object of the practitioner. This we have been advised to accomplish with catheters varied in their form and composition,—straight or curved, constructed of gum or metal. As there is generally more or less impediment to the introduction of the instrument, and as some exertion will be required to overcome it, certainly the metallic will be preferable to the gum catheter. It does not appear to me that the change which takes place in the position of the urethra and bladder, can call for any very remarkable alteration in the shape of the instrument, which has been so long in use. But since, in the history of some of the cases referred to, it is stated, that, although the bladder was enormously distended, yet that very little water was removed by the catheter; and, since this might depend upon a deposition, in the neck of the bladder, from so great an accumulation of urine, or upon some morbid change produced in it by its long retention, I would suggest the application of a longer and more capacious catheter than the one in general use; —say, *a flat* slightly curved instrument, eight inches in length; and a quarter by an eighth of an inch in caliber. An instrument of this length will pass a considerable way into the bladder; and, from the long diameter of the instrument being increased, a large aperture can be formed on its extremity, which will render it less liable to obstruction from any condition of the urine, than a smaller catheter. When the instrument is used, its course must be directed by a finger in the vagina, by which we shall at the same time be enabled to push the uterus towards the sacrum. The catheter being once introduced, it should not be withdrawn until reposition of the uterus has taken place, or some other line of practice determined on.

Laxative enemata for the exoneration of the rectum are preferable to purgatives, as the latter have a greater tendency to produce bearing down efforts, and might cause the uterus to be more completely wedged in the pelvis.

While the urine and feces can be removed, we have, generally speaking, nothing to apprehend for our patient; and, therefore, a week, or even ten days, may be suffered to elapse before we resort to *manual steps* for the reduction of the uterus; but after this lapse of time, the practitioner should certainly feel solicitous to effect its reposition. A patient of a firm, vigorous, habit of body, should be bled to syncope, before an attempt is made to reduce the misplaced organ; but when the subject of the case is a delicate female, the only preparatory step, after the lapse of time already mentioned, is to place her in a proper position. She should be allowed to repose upon her left side in bed, with the knees, previously separated by a pillow, drawn up, so as to form an acute angle with the abdomen; while the head and chest are inclined towards the same point. By this position, which is the easiest for the patient, the abdominal, with the great psoæ and iliaci interni muscles, are relaxed, and the passages rendered perfectly accessible to the practitioner, without any indelicate exposure.

Of the left hand, two fingers previously oiled, are to be advanced into the rectum; while of the right, the same number, similarly prepared, are to be insinuated into the vagina. By those in the rectum, we are to apply pressure to the fundus uteri, *at different points*, and endeavour to push it up gently through the brim, rather in a lateral or oblique direction*; while, by one of those in the vagina, we are to reach the os uteri, endeavour to insinuate the index within it, or hook the finger over the cervix, and assist in effecting its descent into the pelvic cavity. Although at this stage of pregnancy, the os uteri is sometimes so much dilated as to receive the point of the finger, yet the approximation of the sides of the cervix is such as to obstruct even the transit of a crow-quill. This will shew the danger inseparable from an attempt to pass an instrument through the os and cervix uteri, to rupture the membranes, a practice recommended where other means have failed. The difficulty in accomplishing this step must be such, as to cause more injury to the parts of the patient, than puncturing the parietes of the uterus even; and, as the fetus must be lost by either, I should certainly prefer the latter operation.

When in retroversion, whether the case be detected during the early or latter months, a finger can be introduced into the os uteri, to assist in drawing it into the pelvis, I am well convinced, from what has happened in my own practice, and further confirmed by the judicious conduct pursued by Dr Wise in his case, that reposition of the uterus with the expulsion of the fetus, may be greatly accelerated, and the sufferings of the patient consequently diminished, without any injury to the uterus, by conjoining the method which I have now pointed out with pressure on the fundus uteri. Dr Wise, by fixing his finger on the presenting foot, and drawing it into the pelvis, must have, at the same moment, effected a change in the position of the os uteri, by which the extraction of the fetus was so expeditiously accomplished that there is no time specified. The late distinguished Dr Merriman of London, on the other hand, in a case almost similar, was advised to leave matters to nature, and the patient was nearly *six days in labour**.

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* Capuron Traité des Maladies des Femmes, vol. ii. p. 282.

In Daventer, there is a chapter appropriated to obliquities of the uterus, or various positions of this organ†. I agree with Dr Merriman in thinking, that some of the author's remarks on this head relate rather to cases of retroversion, than simple obliquity; but I see no reason for treating with ridicule, or disregarding, all his opinions. Some there are, of course, who are mightily offended with every thing that does not exactly correspond with their own self-witted theories and preconceived opinions; and others, by believing the dogmas of teachers, rather than studying from nature, too often confide in the *ipse dixit* of individuals, rather than advert to physical principles. If we attend to the position of the gravid uterus, with a total disregard to prejudices, we must acknowledge that this organ is not perpendicular to the horizon, but inclines to one side of the abdomen, or its fundus presses forward upon the parietes, between the ensiform cartilage and umbilicus. This obliquity is often so conspicuous as to be observed by a practitioner; and, in many instances, it is perceptible to the patient herself: it occurs more frequently in females of a lax habit of body, or in those who have borne several children, than in women who are for the first time pregnant, from the abdominal parietes yielding more easily in the former than in the latter.

When the fundus uteri is directed towards the anterior part, or either side of the abdomen, the os tincæ will be removed from the centre or axis of the brim, backwards to the promontory of the sacrum, or to either side of the brim. Under such circumstances, the uterine dilatation is tedious, and labour protracted. The protraction must be ascribed to the action of the uterus being expended on some other point of this organ, and not on the os tincæ, owing to this part being removed from its proper situation. In these cases, I believe many gentlemen recommend *time* and *patience;* but I am certain that activity will be more beneficial. The practice which I have long pursued is not new, and has often been reprobated, but I really think without just grounds,—I mean introducing a finger or two within the os uteri, to draw it into the axis of the brim, and there retain it, to be subjected to the full pressure of the membranes, until it be opened to its full extent. It is incredible with what celerity the dilatation goes on by this practice, and I never knew it to be productive of any injurious consequences.

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* Merriman's Essay, p. 28.

† Daventer, Art of Midwifery Improved, chap. xi. p. 55.

4, PICARDY PLACE,
July 10. 1826.

Case of Twenty-eight Calculi extracted from the Bladder without Cutting. By GEORGE BELL, F. R. S. E., Fellow of the Royal College of Surgeons, Edinburgh and London, Surgeon Extraordinary to the King, and Surgeon in Ordinary to His Majesty's Household for Scotland.

CALCULUS Vesicæ, or stone in the bladder, has, from the earliest ages, been justly deemed one of the most formidable diseases to which mankind is liable, whether it be in reference to the agony it excites, or to the pain and danger attending the operation requisite for the cure, and the uncertain event of that operation. The pain attending the division of parts is trifling, the danger scarcely to be named, when compared with the dreadful consequences of an ignorant or mal-adroit person tearing out the stone hastily from the bladder; and, therefore, many patients rather submit for life to the known misery excited by the stone, than to an operation so painful and uncertain; and even surgeons, from want of confidence in their own dexterity and success, have declined performing it altogether.

We need not be surprised, therefore, that, in all ages, from Prosper Alpinus, to Franco, Bromfield, Sir Astley Cooper, Civiale, and Le Roy, practical surgeons have sought for, invented, and detailed, various methods of removing calculi from the bladder through the urethra, without cutting, ere the calculi have attained such size as to prevent their passage through this narrow canal. Each of the methods detailed have proved more or less successful, in the hands of their proposers and of others, but none of them seems to have been useful in any great variety of cases, and they have consequently, though undeservedly, fallen into disuse. This want of success under any one mode of management arises from a variety of causes:—the limited number of cases susceptible of the requisite manipulation falling under the view of any one practitioner,—the indifference of patients to the symptoms at the commencement of the disease—the difficulty of ascertaining the presence of a very small calculus in a large or diseased bladder,—the unwillingness of a patient to submit to a minute examination when his uneasiness is trifling, until the stone or stones have acquired too great a size, may be mentiond as part of the causes of this want of success.

It is not my intention to enter into a detailed quotation of what has been done on this subject, as I have not at present sufficient leisure to do so. I shall merely allude to a method of extracting stones from the bladder, lately revived and brought to great perfection by Sir Astley Cooper, founded on the principle of dilating the urethra, and on the improvement of the instrument employed for seizing the stone in the bladder, and then detail the particulars of a case which lately fell under my care, and terminated successfully.

Sir Astley Cooper gives an account of his success in removing a great number of calculi from the bladder of a gentleman 6 years of age in November and December 1820, by means of a pair of forceps prepared for him by Mr Weiss, delineated in vol xi. of the Medico-Chirurgical Transactions, p. 349. The patient was prepared for the experiment, by the repeated introduction of a bougie, previous to the operation; but I doubt much whether this dilatation was ultimately of any use, as it induced great irritation of the urethra, and then retention of urine, for many days. But the cure was eventually completed, 84 calculi having been removed.

The instrument employed by Sir Astley, is one of great simplicity, ingeniously contrived, and capable of being modified in many ways, so that it may be adapted to a variety of cases. Within these few months I have had an opportunity of proving its utility in a very interesting case. An eminent medical practitioner, of extensive practice, in a distant part of the Western Highlands, who had previously enjoyed good health, about the 18th of May 1825, when riding on horseback, experienced a sudden and irresistible propensity to void his urine, and before he could alight it passed from him. He discovered several small calculi of the size of mustard seed on his shirt; and from that period downwards he never rode or walked half a mile without voiding bloody water, experiencing severe pain in the glans and perinæum, and occasionally passing small calculi, from the size of a millet seed to that of a grain of wheat or barley, about forty of which in all he got rid of. The pain, irritation, and bloody urine continuing, he was laid entirely aside about the beginning of August. Being unable to proceed with his professional business, for which there was a great demand, he came to Edinburgh in the beginning of April 1826, to undergo the operation of lithotomy. On examining his bladder, I ascertained the presence of several calculi, which, from the feeling communicated by the staff, as well as from the short duration of the complaint, I considered to be of a small size. I proposed to the patient to attempt the removal of them by means of an instrument similar to that used by Sir Astley

Cooper;—he readily assented; and, on the 12th April, I removed four small calculi of the size of a pea, at six introductions of the instrument. The prostate was enlarged; there was some difficulty in finding the last stone, and I was unwilling to increase the risk of irritation and of bloody urine, by prolonging the attempt to remove more on the first trial. He sustained very little injury from this attempt; no hæmaturia followed; and I repeated the introduction on the 17th, having previously explored the bladder with the common lithotomy staff which I usually employ in that operation, and removed three calculi of a similar size. The staff (see Plate IV. Fig. 1.) informed me that more were yet remaining, but, for the same reason as formerly stated, I declined farther interference until the 23d, when two more were extracted.

I ought to mention here, that, from the shape of the instrument, the curve being too small, I could rarely discover the calculi by means of it, until I had previously ascertained their precise situation by means of the staff; so that I had other extractors made, of various curvatures, and at last I found that none answered so well as that delineated in Plate IV. Fig. 2. which has a curvature, as nearly resembling the staff Fig. 1. as could permit the stilette *d* to work smoothly. With this I removed seven or eight, between 23d April and 16th May, when one of these calculi having projected rather more than usual beyond the edge of the forceps, greater difficulty was experienced in the removal of it, and probably a portion of the membrane lining the prostate gland was irritated or abraded, as a swelled testicle and retention of urine supervened. These continued for nearly a fortnight, when the patient experienced great relief from the pain and irritation at the neck of the bladder, by the free use of pills composed of camphor and extract of hyoscyamus, [*] after which the forceps were again introduced on the 29th, and several calculi were removed. Between this and the 12th July, more were extracted at different times, and on this day four were taken away, by one introduction of the forceps, making in all twenty-eight since the commencement. My friend Dr Thomson, and my son Mr B. Bell, were present at several of the operations (as was my partner Mr Russell), who examined the bladder very carefully, but neither of us could discover any remaining stone; and the patient being under the necessity of returning home on urgent affairs, after walking about the city for five or six days, without experiencing any return of pain or hæmaturia, left this on the 18th of July, and I have had the gratification of receiving from him the following statement of his present feelings:

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[*] Vide a paper on these medicines in this Number of the Journal by Mr B. Bell.

"In regard to myself, I continue to recover health and strength gradually; my appetite is good, and I sleep well. I have no serious symptoms of calculi, though I have still a sense of irritation and slight pain about the neck of the bladder, and along the urethra, when I have an inclination to make water, which I cannot retain when that inclination comes on, and the discharge of a teaspoonful relieves me, though there is much more in the bladder. This uneasiness, will, I trust, wear off, for had there been any calculi in the bladder, I am convinced I would have felt more inconvenience from walking so much as I did at Glasgow."

The irritation, and the desire he has to make water without emptying his bladder, proceed, I have no doubt, from the inconvenience experienced on the 29th May in removing one of the calculi, and from the state of the prostate gland, which was known to be enlarged before any thing was done, and not from any remaining calculi in the bladder.

As I consider the form of the instrument a point of great importance, an accurate delineation is given in Plate IV. Fig. 2. of that which I latterly employed. The curve of the instrument ought to be considerable, that a larger extent of the blades when separated by drawing back the stilette (*a*, *d*), may be contained within the bladder, and thus the chance of seizing the stone or stone be increased, when the instrument is moved backwards and forward, and from one side to another. The bulb (*e*), the thickest part of the instrument, answers the purpose exceedingly well, of dilating the urethra in its passage into the bladder, where the urethra is tolerably healthy, and it serves admirably for dilating the passage, and paving the way for the transmission of the stones, when these are contained within any part of the concave blades. I have found that the best mode of using these forceps, was to place the patient on his back, across the middle of the bed, his breech nearly overhanging it, and his feet planted on the edge—the surgeon standing or sitting before him—a moderate quantity of urine in the bladder—an ordinary sized staff is then to be passed—the situation of the stone ascertained—then the forceps to be introduced gently, until the bulb is within the neck of the bladder, when the stone being touched, the blades are to be opened by drawing back the stilette, and the instrument being moved in various directions, is to be opened and shut occasionally, until it is known, or supposed, that a stone is engaged between the blades. The surgeon will readily discover whether this has happened or not, by the greater or smaller difficulty in remo-

ving the instrument from the bladder, by the distance of the blades from each other, as indicated by the greater or smaller distance of (*c*), from (*d*) at the neck of the instrument, and above all, by a peculiar feeling communicated upon seizing the stone, which it is impossible to describe, but with which every surgeon ought to be, if he is not, acquainted. In removing the stones, I never found any difficulty or obstruction, excepting about half an inch behind the glans, and on one occasion, when I could not force the instrument through, I succeeded readily by pushing it back about an inch, and turning the side of the instrument instead of its concavity to the pubis.

I consider this instrument to be nearly as perfect as it can be made, for the purposes for which it is adapted—that is, for removing calculi of a small size, such as of a pea or bean, or even of a small nut, or in very large, elastic, healthy urethras, of a small olive. But much larger stones than these have been removed, by being broken down, by Le Roy and Civiale:—these it is not my intention to say any thing of at present. In a few cases the method detailed by Le Roy, may be of great benefit; but Sir Astley Cooper's plan is calculated for more general employment.

I shall only farther slightly allude to a very simple instrument, contrived by a Scottish clergyman for his own use. He had laboured for many years under enlarged and indurated prostate; symptoms of stone supervened; perpetual retention of urine, which was never passed for years without the catheter, by the eye of which several small calculi were at different times brought out. His urethra was of very large caliber, quite callous, bearing any freedom. He cut off the vesical extremity of the catheter, had it plugged up very neatly with a ball of silver, attached to a silver wire, to enable it to pass smoothly into the bladder. When introduced, the ball was withdrawn; his forefinger applied to the outer orifice of the tube, and, after discovering the quarry of stones, he removed his finger, when the sudden gush of urine in a large stream, often brought one or two calculi along with it[*]. When I saw him in Galloway, three years since, he had removed upwards of 150 in this way, and he has continued to remove many more since that time; and although it is known, and he is fully aware that he still has at least one very large stone, yet he has experienced so much relief from incessant pains at the neck of the bladder, by having removed so many small calculi, that he cannot bring himself to submit to the removal of the larger calculi by the lateral operation.

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[*] A representation is given of this instrument in Plate IV. Fig. 4.

In having recourse to this operation, a question arises, whether any, and to what extent, dilatation of the urethra ought to be practised, previous to its performance, for some urethras will bear a great deal, others very little interference. On this point I am very doubtful whether any previous dilatation of the urethra ought to be practised in all cases, when small calculi are to be removed; because, in general, where the urethra is *healthy*, although it be apparently narrow, considerable dilatation will take place, when the trial is made, but each trial is so often succeeded by spasmodic or inflammatory symptoms, that a delay of some days takes place before another can be made. In such cases I would be inclined to make no previous *inefficient* trials, but to let the trial be made when it *may* be *efficient*, by the extraction of one or more calculi; and thus, although it may be followed by more or less irritation, yet some good is done, at the same time, and I am persuaded that the bulb of the instrument (*e*) is sufficiently large to dilate the urethra, and to prepare it for the transmission of the largest stone that one would wish to extract in this way, without breaking it in pieces. If the instrument shall embrace a portion of an irregularly shaped stone, which is too large to pass through the canal, and any difficulty is experienced on its entrance into the vesical extremity of the urethra, this may be easily remedied, by introducing the finger into the rectum, and disengaging the stone from the forceps. If, again, the stone shall have been brought so far as the bulb, and cannot be adjusted so as to pass through the remainder of the urethra, without tearing the lining membrane, there should be no hesitation in removing it, by cutting down upon it; the wound will soon heal, while the laceration of the membrane might be the cause of permanent irritability of the urethra.

Explanation of Plate IV.

Fig. 1. Staff described, p. 347.

2. Reduced view of the instrument for extracting calculi from the bladder, vide p. 347.

3. Is a front view of the bulb of the instrument (Fig. 2.) of the proper size,

4. Catheter employed for removing small stones from the bladder, vide p. 349.

5. Represents a small portion of the catheter (Fig. 4.) of the proper magnitude.

6. Silver ball and wire by which the orifice of the catheter was plugged up, in order to facilitate its introduction into the bladder.

Some Account of the late Improvements in the Surgical Anatomy of the Arteries, and of the recent Publications by which their Delineation, Description, Ligature, or General Treatment, have been improved. By Alexander Monro, M. D. F. R. S. E. Professor of Anatomy in the University of Edinburgh, and President of the Royal College of Physicians.

The following are the works in which the particulars about to be taken under consideration are more especially treated of:

1. *Tabulæ Arteriarum Corporis Humani*, Fol.; *Explicationes Tabularum Arteriarum*, 4to. Carlsruhæ 1822. F. Tiedemann, Anat. et Physiol. in Acad. Heidelberg Prof.
2. *A Practical Treatise on the Arterial System, intended to illustrate the importance of studying the Anastomoses, in reference to the rationale of the new operation for Aneurism, and the Surgical Treatment of Hemorrhage.* By Thomas Turner, Member of the Royal College of Surgeons of London, and Lecturer on Anatomy, and Author of a System of Medico-Chirurgical Education. 8vo.
3. *Icones Chirurg. Anat. in usum Medic. et Chirurg.* Fol. Weimar. J. C. Rosenmuller.
4. *Surgical Anatomy of the Arteries.* 2 vols. 12mo. By Mr Robert Harrison.
5. *Experiments upon the effects of Ligatures upon the Abdominal Aorta.* By Sir Astley Cooper. Medico-Chirurgical Transactions of London, vol. ii.
6. *A Case of Obliterated Aorta.* By Thomas Goodison, M. D. Wicklow; *with some Additional Observations*, by Philip Crampton, M. D. F. R. S. Dublin Hospital Reports, vol. ii.
7. *Case of Ligature passed around the Human Abdominal Aorta.* By Sir Astley Cooper. Surgical Essays, London 1818.
8. *On Ligature of the Arteria Innominata.* By C. T. Grafe. Journ. der Chirurgie, 1822, B. iii. and 1823, B. iv.
9. *A Case of Carotid Aneurism successfully treated by tying the artery above the aneurismal tumour.* By Mr James Wardrop, Surgeon Extraordinary to the King. Medico-Chirurgical Transactions of London, vol. xiii.

THE great and important improvements which have been made within these few years in our knowledge of the anastomoses of the branches of arteries, and in the surgical treatment of aneurism, merit the attention of every reader. Indeed it may be safely affirmed, that there is no department of the healing art which is of greater importance, or more peculiarly interesting to the anatomist, pathologist, and surgeon, than the subject of the present paper.

The writings of the authors above indicated, contain the most recent and most accurate information on the distribution and anastomoses of the arteries and the surgical treatment of aneurism, and form a very useful appendix to the justly celebrated Treatise of Mr Hodgson upon the diseases of the arteries and veins. I have been led to bring them under consideration at the same time, in order to have a more full and connected view of the subject, and have combined works upon anatomy and upon surgery,—sciences which go hand in hand, and depend upon each other, so that the more the one is cultivated, the more the other must be improved.

Much might be said, did the occasion require it, respecting the necessity of combining a minute knowledge of anatomy with that of pathology and surgery. Without an appeal to dissection, the practice of physic and surgery can be directed only by ill founded hypothesis or blind empiricism. When anatomy was neglected, little or nothing was known respecting the nature or treatment of the different kinds of aneurism. The well educated surgeon is capable of reasoning upon the nature of disease; referring the symptoms to certain physical changes going on within the body, and of forming a correct opinion as to the probable consequences of it.

Familiar with the symptoms of danger, he is aware of the proper season for having recourse to an operation; he inflicts pain only to prevent continued suffering, and to preserve life. His anatomical knowledge renders him intrepid at the moment of performing his operation, and prepares him for every untoward or unforeseen circumstance, that may occur during the performance of it.

Of the truth of what has been affirmed, can there be a stronger illustration, than that afforded by the history of the surgical treatment of aneurism?

It is matter of pleasure and gratulation to trace the rise and progress of scientific inquiry, by which the circle of knowledge is extended. The limits of this paper permit us only to remark, that, forty years ago, surgeons ventured no further than to throw ligatures around the humeral or popliteal arteries. I am old enough to have seen death ensue from a rupture consequent to an aneurism of the femoral artery; whereas now it has been clearly demonstrated, that a ligature may with safety be passed around the subclavian and iliac arteries; around the *arteria innominata;* nay, even *around the abdominal aorta,* without the flow of blood to the bowels of the pelvis or inferior extremities being stopped. And it is no small gratification to add, that these very great improvements are chiefly due to Mr Hunter[1], Sir A. Cooper[2], Messrs Abernethy[3], Colles[4], Ramsden[5], A. Burn[6], Listòn[7], Wardrop[8], and other British surgeons[9].

Upon this important subject, let us hear what Sir A. Cooper has said:

"The operation for aneurism is one of the greatest triumphs of our science;—it is founded upon a knowledge of anatomy upon the best physiological principles, and upon a thorough acquaintance with the nature of the disease."

"To that stupendous genius, Mr Hunter, is mankind indebted for it. Before his time an operation had been performed so rarely with success, that surgeons doubted whether it were best to perform it, or amputate the limb; and I can recollect seeing a man who regularly came to St Thomas's Hospital to shew himself, because he was thought to be a curiosity in having recovered from the operation for popliteal aneurism. This was forty years ago. The operation then consisted in applying a tourniquet upon the limbs, in making an extensive incision into the aneurismal bag in the direction of the artery; in removing the layers of fibrine accumulated in the sack with the hand; and in spunging the bag clean. The tourniquet being then loosened, the openings from the artery were seen; a probe was passed into the orifice, towards the heart; and a ligature was tied round that part of the artery. A probe was then carried into the orifice next the foot, and a ligature was made to surround that portion of the artery. Thus a ligature was applied above and below the opening into the sack, and the wound was attempted to be healed, as any other in which ligatures are introduced. High constitutional irritation followed the operation; extensive suppuration succeeded; hemorrhages were frequent consequences; and the issue was generally unsuccessful."

As the study of the distribution and anastomoses of the arteries should precede that of their diseases, we shall commence by giving a short account of the lithographic drawings of the arteries of Professor Tiedemann, and by making a few remarks upon them.

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[1] Trans. of a Society for the Improvement of Medical and Surgical Knowledge, vol. i.

[2] Med. Chir. Trans. of London, vol. ii. &c.

[3] Surgical Observations, 2d edition.

[4] Vide Harrison's Surgical Anatomy of the Arteries.

[5] Observations on Sclerocele and Aneurism. London 1811.

[6] Surgical Anatomy of Head and Neck.

[7] Edin. Med. and Surg. Journal.

[8] Med. Chir. Trans. of London, vol. xiii.

[9] J. Bell's Principles of Surgery, vol. i. Hodgson's Treatise on Diseases of the Arteries.

Professor Tiedemann is well known as a skilful and assiduous anatomist. The high academical situation this author sustains by various writings on anatomy, has drawn the attention of all anatomists to his lithographic representations of the arteries. Placed in the most favourable circumstances for cultivating his favourite pursuit, he has not failed to avail himself of the advantages which his peculiar situation presented to him.

He tells us he has devoted 17 years to the preparation of the materials for his Tables of the Arteries, and had dissected for the purpose, the bodies "*quingentorum amplius cadaverum*," of persons of different ages and sexes. He also had the peculiar advantage of having at his elbow a zealous coadjutor, Dr Roux, in whom were combined the skill of an anatomist with that of an expert draughtsman.

I have repeatedly turned over these drawings, and always with gratification; and am fully persuaded of their superior merits, and of their being faithful portraits. All of them bear the stamp of having been drawn from the recent body; a circumstance essential to fidelity of representation.

Dried preparations of the arteries are by some too much prized. They possess but little intrinsic value; and we affirm, from our experience, that they communicate incorrect ideas of the relative situation of the arteries.

It is impossible to preserve the arteries in their natural situation when drying. Besides their being distended, and generally over distended, by the injection with which they have been filled, tends still further to destroy the exact relation of the arteries to the neighbouring parts.

In short, when a surgeon, wishes to refresh his memory as to the exact place of an artery, before proceeding to his operation, I would most strenuously recommend to him to consult Tiedemann's drawings, rather than dried preparations; the former may assist him most materially; whereas the latter cannot fail to mislead him. Professor Tiedemann has supplied a great desideratum. The plates of Haller have received their just tribute of applause, but they must be regarded as far inferior to those of Tiedemann, not only as being taken from subjects of different ages and sizes; but also, as containing less accurate and complete information respecting the communications of the arteries, by which the collateral circulation is maintained, when the main trunk has been obstructed by a ligature.

We are already in possession of excellent engravings of cer- ·n parts of the body, accompanied by accurate descriptions o the bloodvessels. Those of Dr Peter Camper, representing the bloodvessels of the arm and pelvis merit particular notice; as also those of Sir A. Cooper in his admirable book on the different kinds of hernia.

Scarpa's engravings of the arteries engaged in the operation of hernia and aneurism, also merit the highest praise, on account of their fidelity and elegance of representation. They have seldom been equalled, and certainly never surpassed; and if, on all occasions, the corresponding veins and nerves had been exhibited, they would, in my opinion, have been unobjectionable.

Upon the whole, the lithographic drawings of Tiedemann form the most perfect series of representations of the arteries that has been published; and their being of the size of nature still farther enhances their value. I have entirely omitted mention of all engravings of the arteries excepting those which are of the size of nature; because, in engravings of a smaller size, the due proportion between the arteries and other parts is seldom or never preserved; and if it were preserved, the smaller communicating branches, by which the collateral circulation is maintained, and to which the surgeon looks with an anxious eye, cannot be represented.

Though we have bestowed much praise upon the book of Professor Tiedemann, yet it is to a certain extent objectionable. Too much has been sacrificed to elegance, and too little attention has been paid to economy, (the price being 10 or 12 guineas). It is conceived, that all the outlines might have been omitted, and that, by properly placing the letters upon the more finished drawings, their utility and beauty would not have been impaired. If a part of the decorative drapery of some of the figures had been omitted or curtailed, more figures could have been put upon some of the stones. Besides, some of the drawings might have been omitted; for instance, that representing the small arteries proper to the muscles of the back, which are comparatively of little moment in a surgical point of view, and seldom or never follow the same course in any two persons.

In short, the best judges are fully persuaded, that a bookseller would be well repaid by publishing a selection from the representations of Tiedemann upon the plan above suggested.

The Engravings of Dr Rosenmüller, illustrative of Surgical Anatomy, are very far inferior in point of fidelity of representation, and elegance of execution, to those of Scarpa, Cooper, Camper, or Tiedemann. But, as they form the only complete system of engravings on that subject that has been published, they deserve a place in the library of the anatomist and surgeon. We rejoice to be informed, that the celebrated Langenbeck is about to publish a very extensive book on surgical anatomy, which is at present very much wanted.

The Practical Treatise on the Arterial System of Mr Thomas Turner, which is intended to illustrate the importance of studying the anastomoses, in reference to the *rationale* of the new operation for aneurism, and the surgical treatment of hemorrhage, contains an abbreviated and very luminous description of the course of the arteries, and of their inosculations, accompanied by illustrative plans, and many important remarks upon aneurism, and the method of curing that disorder by operation.

There is not space to follow our author through his whole book. I cannot, however, omit directing attention to the latter and most original part of the treatise, in which the author has adduced several cases in illustration of his peculiar opinion as to the anastomoses of the arteries:

"I repeat, then, that we have more to dread from the anastomoses being very abundant than from their being few; that, when too free, the aneurismal sack may be fed by the recurrent circulation, and go on distending to absolute bursting, which gives rise to hemorrhage and death; or a current of blood may pass through the sack, which will be sufficient to continue the disease, or to reproduce it.

"When a ligature is applied to the external iliac, for femoral aneurism, a little below Poupart's ligament, we have to apprehend bad consequences from the recurrent circulation; as only the epigastric and circumflexa ilii arteries open between the ligature and the sack: and when the aneurism extends so high as Poupart's ligaments, it is more than probable that the mouths of these branches will be closed by the coagula, and coagulable lymph of the sack. When the aneurism is seated below the origin of the profunda, and the ligature is put on the vessel below the groin, we have to fear the influence both of the direct and recurrent circulation, as all, or the principal branches of the internal iliac, inosculate with those of the profunda; and the descending branches of the profunda anastomose with the muscular rami of the femoral, and other branches passing off below the aneurismal swelling.—But when the disease is situated in the ham, we have to fear the action of the direct circulation on the sack, particularly when the femoral trunk is pervious to a great extent between the ligature and the tumour. We may then fairly question the propriety of tying the femoral artery, for popliteal aneurism, in the situation which Scarpa directs, viz. in the upper third of the thigh, above where Hunter proposed. His reason for this practice, viz. to avoid the necessity of removing the sartorius muscle too much from its position, or of turning it back, for the purpose of exposing the artery, is good so far as it facilitates the operation; but we have in view the removal of the disease, and therefore we should look to the effects of operating so high up, on the anastomosing vessels. In this case, the ligature is applied below the bifurcation of the femoral artery; a considerable space is left between the ligature and the aneurismal swelling, and from the femoral trunk included in this space pass off many muscular branches, which freely communicate with those of the profunda. On these accounts I believe Scarpa's proposal to be more objectionable than that of Hunter; for the latter incurs little risk of failure from a morbid state of the artery, another reason assigned for Scarpa's deviation."

The Surgical Anatomy of the Arteries of Mr R. Harrison of Dublin is a most useful adjunct to the anatomical drawings of Professor Tiedemann; it supplies the only deficiencies in the volume of explanation which accompanies Tiedemann's drawings. This valuable manual contains a most accurate description of the several branches of every large artery that is of importance in a practical point of view to the surgeon, from being concerned in operations, or endangered in accidents, or occasionally of essential service in establishing collateral circulation; and the descriptions have been derived from numerous dissections. The book of Mr Harrison also abounds with many excellent observations upon the various operations which are performed upon the arteries, and also explains their relation to the contiguous nerves and veins. The objection to Mr Harrison's volumes is the want of corresponding engravings; verbal description alone being inadequate to convey to the mind correct ideas of situation or form.

The limits of this sketch preclude us from entering upon the consideration of any other aneurisms, excepting those of the Aorta, the arteria Innominata, and those of the Carotid artery, to which the writings of the authors we have above referred to relate.

Of Aneurism of the Abdominal Aorta.

The drawing of Tiedemann represents the abdominal aorta, and the branches proper to it; and his fifth and sixth drawings represent the course of the common carotid artery, and also its division, into its two great branches, the external and internal carotid arteries. The relation of these arteries in respect to the sterno-mastoid and omohyoid muscles is well represented in the fifth drawing; and, in the sixth, these muscles have been removed to exhibit the subjacent parts. These same drawings also represent the anatomy of the parts engaged in performing the operation for the subclavian aneurism.

It is a remarkable circumstance, that, though Tiedemann tells us his drawings may assist the surgeon in the application of ligatures, " quod in curatione et sanatione vulnerum valeat corporis nostri vasorum cognitio;" yet he has rendered his drawings of much less value than they otherwise might have been, in consequence of having removed the accompanying nerves and vein. Thus they do not communicate to the surgeon who is about to operate for the cure of aneurism the requisite information. In his drawing of the aorta, the thoracic duct*, vena cava, and hypogastric plexus of nerves, has been removed, which should have been left; as the including the vein, the duct, or the nerves, could not have failed to be productive of the worst consequences. For example, after our first attempt to throw a ligature around the aorta of a rabbit, in consequence of our having included the hypogastric nerves, an incurable palsy of the hinder legs and death followed; and on another occasion, upon repeating a similar experiment, though no degree of palsy followed, the animal died four days after the application of the ligature around the aorta, and it may be added, that, upon dissection, there were no traces of peritoneal inflammation.

Many instances of this form of aneurism have been recorded. These aneurisms are seldom discovered until they have attained a large size, and their pulsation can be both seen and felt; and it may be added, that we have met with such aneurisms after death, when *there were during life no symptoms of their existence.*

Every thin person, on bending his body forwards in bed, and drawing up his thighs, feels the pulsation of his own aorta; and that has often been mistaken for an aneurism. The late Mr A. Burns of Glasgow† and Dr Albers have pointed out at great length the various causes of preternatural pulsation in the epigastric region. The former author has observed, that "pulsation *in epigastrio* may be produced by adhesion of the heart to the pericardium; by enlargement of the heart itself, chiefly of the right side; by tumours attached to the diaphragm; by enlargement of the vena cava inferior; by preternatural solidity of the lungs; by any solid increase of substance about the aorta, or roots of the large abdominal arteries; and, lastly, by a peculiar affection of the vascular system itself. You have also seen, that sometimes this condition of the vascular system is extended almost over the whole body, as in the case of the shoemaker related by Morgagni, or is confined to the abdomen, as in the case I have extracted from Dr Albers."

As far as I have observed, it more frequently proceeds from a derangement in the functions of the stomach and intestines, than from any other cause. It is remarkable also, that a pulsation proceeding from such a cause as I have mentioned, should in some cases be of many months duration.

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* Laennec has made mention of a case of aneurism of the descending aorta, which partly destroyed the thoracic duct, and occasioned a remarkable turgescence of all the lymphatic vessels.

† Vide Observations on Diseases of the Heart, p. 262.

I have had occasion to meet with three remarkable instances of aneurism of the abdominal aorta; they were the result of great bodily exertion. The patients at the moment perceived something burst within them, and were seized with very acute pain in the belly, owing probably to the pressure of the tumour on the splanchnic nerves. In the progress of the disorder, great difficulty of breathing came on, the descent of the diaphragm having been impeded by the bulk of the tumour; and from the same cause the functions of the alimentary canal and urinary organ were much deranged, so that the patient occasionally laboured under a very exhausting diarrhea and suppression of urine.

The late Mr Watson has published, in the London Medical Commentaries, vol. i., a most striking instance of aneurism in this part of the aorta.

> "During the first six months of his (the patient's) illness, the pain was confined to the back; but, after this period, it began to extend towards the left side; and soon after a swelling appeared under the false ribs on that side. This swelling gradually extended itself to the os ilion; and at the same time the pain was also extended, being now neither confined to the back nor to the side, but felt throughout the whole abdomen.
>
> "When the poor man was first attacked with this complaint, he was able to work at his business, though a laborious one; but always, after lifting any heavy weight, found the symptoms increase.
>
> "He was frequently affected with shortness of breath, troublesome cough, and difficulty in making water; which last symptom induced him to think that he had the gravel. The day before he died his urine was tinged with blood.
>
> "Mr André first saw him on the 29th of September 1773 (about eighteen months after the accident), in company with his apothecary Mr Saunders. He was in bed, and had all the appearance of a dying person; no pulse was to be felt at his wrists, but on applying the hand to the swelling, a very strong and evident pulsation might be felt. He died about eleven o'clock the same night.
>
> "Having obtained permission, the body was opened the next day.
>
> "The abdomen felt hard and tense, although the swelling had rather subsided; and on opening this cavity, a large oblong and very prominent tumour immediately appeared in view, extending on the left side from the diaphragm to the brim of the pelvis. On a closer examination, this swelling was found to be within the circle of the colon, having forced the small intestines to the right side; and projecting forwards so much that it was in contact with the peritoneum, where it lined the inside of the transversalis muscle. A considerable quantity of bloody serum was also found floating within this cavity.

" The anterior and most prominent part of the tumour proved to be the left kidney in a sound and healthy state; but removed to a considerable distance from its natural situation, by the enlargement of the great artery which lay partly behind it.

" In dissecting away the kidney, a large quantity of coagulated blood was found in the cellular membrane surrounding it. This coagulum, which also covered the rest of the tumour, was about an inch thick, tender, and of a very black colour; and no doubt had not been long formed. It was afterwards discovered that the blood here contained in the cellular membrane had escaped from two openings in the aneurismal tumour: the one, which was the lowermost, seemed to have been of some standing; it looked towards the iliacus internus muscle, was of an oval figure, and plugged up by a firm coagulum of the size of a hen's egg; the other opening was much smaller, and the blood within it appeared to have been but recently coagulated. Upon removing the cake of blood, together with all the cellular membrane about it, a large bag was exposed, which proved to be an aneurismal sac of the aorta.

" To obtain a better view of this diseased vessel, the crura of the diaphragm, the root of the mesentery, together with the fat and glands which cover the aorta, were all removed. This operation completely exposed the whole extent of the disease, which spread itself over all the vertebrae of the back below the diaphragm, and over the uppermost vertebrae of the loins.

" The sack was unequally divided, the part lying on the left side of the spine being by much the largest, and measuring in length seven inches; the greatest breadth on this side was four inches five-eighths. It filled that hollow space which the left kidney ought to have possessed, and assumed very much the shape of that viscus, though it was more than twice as large.

" That part of the bag which extended over the right side of the spine, and was situated between that and the right kidney, measured in length three inches five-eighths, and in breadth one inch and two eighths.

" It was further observed, that the sack or tumour, in a manner, embraced the anterior part of the spine, by being firmly connected with the sides of the vertebrae. Upon separating this connection, a large quantity of fluid, as well as of coagulated blood, immediately gushed out; the coagulated part had not, as yet, acquired that firm leather-like consistence so frequently met with in aneurismal tumours, but was in the state of a soft jelly, as if formed *in articulo mortis*.

To expose the internal surface of the sack, and to get a view of the spine, the whole tumour was raised and turned to one side. The sack appeared very smooth within, and the dilatation of the aorta was evidently forwards, and to each side of the spine.

" The sack began to be formed at about an inch and two eighths above the caeliac artery, and was continued below the origin of the mesenterick trunk. The diseased portion of the aorta was two inches six eighths in length, but both above and below the sack the aorta was perfectly sound, and of its natural dimensions."

This aneurism is sometimes complicated with aneurisms of other arteries, as in the remarkable case which fell under the notice of Sir A. Cooper, and which led him to attempt to save the life of his patient by an operation. The patient laboured under an aneurism, which was left partly above and partly below Poupart's ligament in the left groin. Sloughing and bleeding of an alarming nature followed. Sir Astley having found he could check the bleeding by no other means but by passing a ligature around the abdominal aorta, resolved to do so. Accordingly the operation was performed. The patient survived the operation only forty hours.

Upon examination after death, the ligature was found around the aorta, about three fourths above its division into its great iliac branches. There was no appearance of peritoneal inflammation, excepting at the edges of the wound. After having opened the vessel, a clot, about an inch in diameter, was found above the ligature, and another beyond the division of the aorta into its great iliac arteries, *which completely obstructed them.* The aneurismal sack was of great extent; it passed from the common iliac to below the crural arch.

As far as is known to me, only two cases have occurred in which the abdominal aorta has been completely obliterated, and they merit peculiar notice, as they prove the possibility of saving a few lives by passing a ligature around that artery where it passes through the abdomen; but we apprehend that a similar attempt upon the aorta within the thorax, cannot be expected to be successful.

The first and only case of obstructed aorta which is recorded, occurred at Paris to Dr Thomas Goodison, and is described in the second volume of the Dublin Hospital Reports. Subjoined is a copious extract from this very remarkable case, of which it is much to be regretted that the previous history could not be gained.

"Upon endeavouring to trace the origin of the inferior mesenteric artery, in the body of a female subject (which had been brought to this hospital from the Hotel de Dieu,) amongst many others I discovered a hard tumour, which, from its situation, puzzled me not a little at first, being directly placed upon the line of the aorta, and which, upon more minute examination, I found to be a diseased state of this vessel, which, upon still further inquiry, I found to be obliterated from the origin of the inferior mesenteric artery downwards, for the remainder of its length, together with the greater part of the iliacs, on each side, the cavity of that on the left side being obliterated to its bifurcation into external and internal, and that on the right to more than one-half of the length of the common iliac.

"The artery lay close, and was firmly attached to the spine. It had precisely the appearance of the trachea; being rendered flat upon its posterior surface, but preserving anteriorly its circular or convex form.

"The iliac veins were so intimately connected with the arteries, as to cause considerable difficulty in their removal.

"There was a large quantity of gelatino-cartilaginous matter surrounding that part of the aorta and vena cava, together with the portions of the iliac arteries and veins, which were included in the disease.

"Nothing more, of any particular importance, appeared in the remaining track of the artery, excepting the increased size of the vessels given off from it, and more particularly of the lumbar arteries, until the diseased part came under inspection—and here there was considerable difficulty encountered in opening the obliterated part, the sheath of bone being very thick and strong. The external appearance of the artery at first led me to think that an enlargement of its cavity existed; but this was not the case at the time of the examination, whatever might have been its state formerly. This appearance was owing to the formation of the case of bone externally, and to the formation of gelatino-cartilaginous matter internally.

"The bony sheath encased the artery for the space of about two inches, and was filled with a firm fleshy substance, which had the appearance of the muscular fibre of the heart. This substance was prolonged upwards, beyond the bony sheath, and adhered firmly to the coat of the artery.

"The lower extremities appeared perfectly sound and full, and not at all emaciated. This, however, is not to be wondered at, when we consider the period which must have elapsed since the final establishment of the obstruction, and which is evidently demonstrated to have been at some considerable time back; first, from the extent of the obliterated vessels; secondly, from the deposition of matter externally upon the diseased part of the vessel, which matter was almost wholly converted into cartilage, and must be supposed to have been formerly coagulable lymph, thrown out in consequence of the inflammation produced by the pressure of the column of blood upon this part of the artery, at the time of the obstruction having formed,—and which lymph must have taken some years to assume the form under which it appeared; lastly, from the deposition of bony matter on the superior part of the vessel, which may probably be supposed to have originated, in consequence of the increased action produced by the pressure of the blood on this part of the artery, at the same period."

The only other case of obstructed aorta with which I am acquainted, fell under my own notice. I shewed it to my pupils last winter, and made many comments upon it. The tumour was about the size of a common orange, somewhat flattened, and lay upon the second and third lumbar vertebræ, and seemed to have been formed by an uniform expansion of all the coats of the artery, and there was no appearance of rupture or ulceration in any part of the internal coat of that vessel.

The aorta, which, above the tumour, was evidently contracted, *was filled by a plug of fibrine of a conical shape, the narrower extremity of which was undermost, and it adhered to th* *side of the aorta by a thin layer of coagulable lymph.* There was no enlargement of the celiac, mesenteric, or lumbar arteries.

The most striking feature of this very remarkable case was, that before death *there was no one symptom which led to the suspicion of the patient having been afflicted by an aneurism.*

From the experiments upon dogs and other animals above mentioned, which have been performed by Sir A. Cooper and others, and from the cases which occurred to Dr Goodison and myself, it evidently follows that life might be saved by passing a ligature around the abdominal aorta.

Sir A. Cooper is represented, in the periodical publication called The Lancet, to have thus expressed himself as to the passing a ligature around the abdominal aorta: " I know for my own part, that I would not hesitate to have my own aorta tied, if it would save my life for only forty hours."

I made mention, in my lecture upon the case of obstructed aorta, of an experiment I had made, which affords an additional argument in favour of throwing a ligature around the abdominal aorta. That vessel was cut across between the superior and inferior mesenteric arteries, by which the different portions of the aorta were separated from each other about an inch. One pipe was fixed into the upper, and another into the lower portion, with their mouths in the opposite direction. A coloured wax injection was then thrown into the uppermost pipe, and in a very short time I found that all the arteries of the inferior extremities had been filled by the injection, and part of the injection ran out at the lower pipe.

Upon examining the subject I found that none of the injection had reached the inferior extremities by the medium of the anastomosis between the internal mammary and epigastric arteries, or any other anastomosis, excepting that between the superior and inferior mesenteric arteries; and hence I concluded, that as in this instance, in which there had existed no previous degree of enlargement of the anastomosing branches of the arteries, *a fortiori* the thinner blood would find its way to the inferior extremities, in an instance in which the aorta was in a state of aneurism, and to a certain degree obstructed by clotted blood within the aneurismal sack.

Of Aneurism of the Arteria Innominata.

As Mr Hodgson has not made mention of the aneurism of this particular artery, we shall subjoin a very few remarks upon it.

Tiedemann has represented great variety as to the origin of the great bloodvessels from the arch of the aorta, in his third and fourth drawings; but as these would be in a great measure unintelligible without a reference to an engraving, I have omitted more particular mention of them. These merit the attention of the surgeon, who is about to operate upon this artery.

I would beg leave to offer a hint to the younger members of the profession, as to the difficulty of the diagnosis between an aneurism of the aorta innominata and that of the arch of the aorta. I lately had occasion to meet with an instance, in which the patient, during life, was supposed to have laboured under an aneurism of this artery, but which, upon dissection, proved to be an aneurism of the arch of the aorta; and besides, it is not uncommon to meet with the aorta and arteria innominata in an aneurismatical state at the same time.

Dr V. Mott[*] was the first who took up this artery; he has been followed by Graffe of Berlin[†]. These authors have particularly described their methods of operating.

Of Aneurism of the Carotid Artery.

It is foreign to my intention to enter at large into the history of this kind of aneurism, or as to the usual method of performing an operation for the relief of this disease, because, upon this subject, much has been published within these few years by Sir A. Cooper, Mr Hodgson, and other distinguished surgeons. I purpose merely to direct the attention of the reader to the method of throwing the ligature around the carotid artery, which has been very lately *successfully practised by Mr James Wardrop, who, instead of placing his ligature upon the artery between the tumour and the heart, so as to prevent the influx of blood, threw it around the artery beyond the seat of the disease,* so that, by thus stemming the current of blood through the vessel, nature might establish a new channel to carry on the circulation, allow the blood in the tumour to coagulate, and the sack and vessel to contract, and be obliterated, as takes place after the common operation. It may be proper to remark, that this mode of practice had been attempted upon an aneurism in the femoral artery, which was close to the crural arch, by Mr Deschamps, and also by Sir A. Cooper, in a case of iliac aneurism. Both attempts, however, proved unsuccessful.

Notwithstanding the result of the cases just quoted, Mr Wardrop was induced to attempt this method of operating in a case of aneurism of the carotid artery. The following reasons, which appear to be sufficiently valid, induced him to undertake the operation:

1st, Because it was impracticable, in consequence of the tu-

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[*] Valentine Mott in the New York Medical and Surgical Journal, vol. i. 1818.

[†] C. T. Graffe in Journal der Chirurgie.

mour being in contact with the collar bone, to pass the ligature below it.

2dly, As, on account of the rapidly increasing bulk of the tumour, the patient's life was in imminent danger.

3dly, As no branches are sent off from the common carotid artery, the process of coagulation would not be interrupted by the continuance of circulation through collateral branches in immediate continuity with the aneurism.

Lastly, As there was sufficient space to apply a ligature between the tumour and the place where the carotid artery divides into its two great branches.

Mr Wardrop performed his operation in the following manner, as described by himself:

" The operation consisted in making an incision through the skin and cellular membrane, rather more than an inch and a half in length, commencing it immediately above the tumour, and extending it on the tracheal edge of the mastoid muscle, and in the direction of the carotid artery, taking care to avoid the large superficial veins. The subsequent part of the dissection was chiefly made with a silver knife, guided by the finger; and there was no particular difficulty in reaching the artery, but what might have been anticipated from its great depth, from the necessary limits of the incision, and from the numerous large veins which were carefully to be avoided, particularly a branch which extended across the middle of the incision to the internal jugular, and which consequently diminished the space in which the artery was to be taken up. After a careful dissection, which was tedious from its being necessary to tear the parts with the silver knife, the artery was so completely separated from the adjacent parts, that the point of the finger could be readily passed between the vessel and the vertebrae; and the aneurismal needle, of which I have annexed a particular description, was passed round the artery with singular facility, taking care to avoid the par vagum, which was distinctly felt behind the finger. The vessel being previously ascertained to be healthy, one ligature was tied round it, as close to the tumour as the incision would admit, and the lips of the wound were stitched together by a suture, without any farther dressings. The aneurismal tumour was covered with adhesive plaster, in order to protect the tender skin, and at the same time to keep up a certain degree of pressure. I thought it probable that the resistance to the circulation which the ligature would necessarily occasion, might, for a short while at least, after its application, be followed by an increase in the distention of the tumour; instead of which, however, there was an immediate decrease in its bulk, marked by a considerable corrugation of the skin at the base, as well as a diminution of its redness. The ligature of the artery did not seem to produce any change in the mental functions, or any unnatural feelings in the head. On the contrary, the patient passed the night after the operation more comfortably than that previous to it, the tumour being accompanied with less uneasiness. A progressive diminution in the bulk of the aneurism, and in the strength of its pulsations, took place, so that, on the fourth day after the operation, it seemed to have diminished nearly one third in its bulk; the upper and tracheal portions had lost all pulsation, and only the scapular portion retained an obscure undulatory thrill. The integuments, which had lost their redness, now evidently became more inflamed, and during the fifth and sixth days there was a distinct increase in the size of the tumour, and it pulsated more strongly, which seemed partly owing to several severe fits of coughing. This apparently unfavourable change was, however, followed by a decided amendment; and eight days after the operation the swelling again began to diminish, and the pulsation became more obscure, so that, on the fourteenth day, it was not much larger than half its bulk at the time of the operation, and no pulsation could be detected in any portion of it: merely a slight vibration in some parts, which seemed to be produced by the pulsations of the contiguous vessels, which were now enlarged, particularly the inferior thyroid artery.

Memoir upon Multiple or Twin Births. By Professor Dugès.

1. In relation to the *number* of children which are born, in each delivery, we have obtained the following results, according to the registers of the Lying-in Hospital of Paris, during twenty years.

In 37,441 deliveries, there were

36,992 uniparous, or single,
444 biparous, or twins,
5 triparous, or triplets.

No birth of four or five twins has been observed at the Hospice de la Maternité (at least till 1821), nor even at the Hotel-Dieu, before the establishment of the Maternity; at least, by referring to the registers of my grandmother, Madame Dugès, kept with great accuracy for sixty years before 1821, which gives a total mass of 108,000 deliveries.

Yet quadriparous births occur from time to time. Lately the journals announced the birth of four twins, not one of which lived. A similar fact took place at Paris in October 1823; another at Strasburgh in the year 1809. Gottlob relates the case of one woman who bore eleven children at three births, a circumstance which supposes two quadriparous and one triparous delivery. Two still more striking examples occur in the works of ancient authors, particularly of Ambrose Paré (p. 724.) unless the credulity of the latter excellent person be supposed to render these somewhat suspicious. At all events, it appears that the possibility of quintiferous pregnancy cannot be totally denied; but it is the extreme limit of multiplicity to simultaneous human births. In the Bibliotheque Medicale, tom. xix. p. 374, an observation, inserted on the authority of Petretein, a Greek physician, details the premature birth (at seven months) of three living girls, and of another girl and boy, although equally developed.

2. *Sex.*—Of fifty-four biparous deliveries, taken at random, fifteen exhibited a boy and a girl; thirteen two girls; twenty-six two boys; this last proportion, therefore, almost the half of the whole, seems to be the most common. The second is a proportion less striking. In two triparous births, attended by Madame Lachapelle, there were born, in the one, three girls, in the other, two girls and a boy.

III.—PHARMACY.

On the Medical Properties of the Subcarbonate of Iron. By JOHN ELLIOTSON, M. D. Cantab. Fellow of the Royal College of Physicians, &c. &c. (From the Transactions of the Medico-Chirurgical Society of London. Communicated by ANTHONY TODD THOMSON, M. D. F. L. S.)

THE introduction of the use of the subcarbonate of iron, in large doses, for the relief of tic doloureux, by Dr Hutchinson, has led to the frequent exhibition of that remedy, in doses of a drachm, and even four scruples, the extent to which we have given it; but Dr Elliotson has brought forward facts, in the paper before us, to prove that half an ounce may be given for a dose, and repeated every four hours, not only without inconvenience, but with evident benefit to the patient.

" When the medicine is proper," says our author, " I believe there is generally no limit to the quantity which may be taken, except the unwillingness of the patient to swallow it, and the inability of the stomach to manage so heavy a mass. Neither headache, thirst, heat, foulness of tongue, griping, nor constipation, has occurred, nor been increased, if already present. Nay, pain and heat of the head, and giddiness, existed already, in some cases, and ceased during its employment."—P. 236.

Dr Elliotson next properly inquires, Whether any real advantage arise from such large doses; and whether, even in those cases which the larger doses seemed to cure, after the smaller had failed, the benefit might not be attributed to the continuance of the remedy? From analogy, independent of the experience which he brings forward, Dr Elliotson thinks we may decide in favour of the superior efficacy of the larger doses, as we every day see the beneficial effect of large doses of cinchona in ague, when smaller doses altogether fail. Dr Cullen had stated, that, although he had been informed that *rust* of iron had been given to the extent of six drachms in a day, yet he had found scarcely one stomach that would bear the third part of that quantity without sickness,—a circumstance which Dr Elliotson ascribes to the grittiness of the rust, whilst the subcarbonate which he employs is an impalpable powder. He mentions also, as a passing remark, "that a scruple of the sulphate of iron, made into pills, with extract of gentian, is borne just as well as half an ounce of the subcarbonate;" and adds, that "every observation which I have made respecting this dose of the latter, applies nearly to that dose of the former. I have occasionally given more, and even in solution, without sensible effect."—P. 240.

The first of the cases which Dr Elliotson brings forward in support of his position, is one of paralysis agitans. The patient was treated, in the commencement, with the ointment of tartarized antimony, applied to the legs: "he next took ℥j of oil of turpentine, and then ℥ij every other day, for above a week:" after which he went through a course of sulphate of zinc, carried to the extent of gr. vijss. for a dose, every six hours; besides being purged, blistered, cupped, and having a cold spirituous lotion applied to the head, without any benefit. The subcarbonate of iron was next prescribed, in doses of ʒss every eight hours, and the daily application of eight leeches to the temples continued; for this number of leeches had been previously applied daily for eleven days. In four days he was relieved; and, by gradually increasing the dose to ʒiij four times a-day, he was discharged from the Hospital (St Thomas's), at the end of forty-two days nearly well; and, by continuing his medicine for a month, was perfectly recovered. It is not easy to ascertain how much of the benefit was due to the use of the leeches in this case; but, as they were not applied for seventeen days before he left the hospital, and the progress of the cure continued progressive, much undoubtedly may be justly attributed to the subcarbonate of iron.

This remedy was next tried in chorea, eight cases of which are detailed. In the first, which was a recent but a severe case, and was attended with epileptic fits, the utmost dose of the subcarbonate was one drachm, repeated every six hours, and continued for six weeks. In the second case, which was also severe, and the patient twelve years of age only, the same dose, repeated every eight hours, for two months, completely restored health. In the third, the subject of which was eight years old only, half a drachm was the ultimate dose, and relieved the symptoms; but, from the irregularity of the patient, the termination of the case could not be ascertained. The fourth case, which was that of an adult, was of six months standing, and was accompanied with *pain of the forehead, especially in stooping*. Two drachms of the subcarbonate were administered every night, which soon relieved all the symptoms, even the pain of head; and completed the cure in nine days. In the fifth case, that of a girl eleven years of age, *with a florid complexion, and in high condi-*

tion, the remedy was carried to the extent of half an ounce every four hours. She was dismissed, perfectly well, in about ten weeks. "The disease," however, "returned in a very slight degree, but yielded permanently to the medicine." In the sixth and seventh cases, half an ounce was the dose; and it was carried to the same extent in the eighth case; and *headache*, to which the patient, a girl aged fifteen, was always subject, with temporary *loss of sight, which continued sometimes for nearly half an hour*, yielded to its remedial power."

"I have failed," says Dr Elliotson, "with the largest quantities of iron in epilepsy, cancer, and lupus, but found it very beneficial in chronic neuralgia, and various chronic ulcerations and chronic pustular diseases, as well as those diseases of debility in which it is so justly celebrated."—P. 252.

This paper is concluded with a case of "*a fat rosy-faced child*, aged four years, who refused to take the subcarbonate in doses of half a drachm, and was cured with the sulphate of iron, given in doses of gr. iij. three times a-day." It certainly affords creditable testimony of the value of preparations of iron in chorea; and proves that half an ounce of the subcarbonate may be taken for a dose with impunity; but we are of opinion that the necessity for these excessive doses is not clearly demonstrated.

Some account of Dr Christen's *History of Opium, entitled Opium historice, chemice atque pharmacologice investigatum.* Per Christophorum Andr. Christen, Med. Doct. &c. &c. Vindebonae, 1820. 8vo. p. 316. Communicated by Anthony Todd Thomson, M. D. F. L. S.

WHEN we reflect on the importance of opium as a remedy, the constant and extensive administration of it, in every part of the civilized world, and the antiquity of its employment for allaying pain and procuring sleep, in diseased states of the body, it is rather surprising that no complete history of this drug has hitherto appeared. But this neglect is more calculated to excite astonishment than to occasion regret; seeing that the improvements of chemical analysis which have characterized the last twenty years, have enabled medical philosophers to obtain a more accurate knowledge of its components than could have been acquired at any prior period, and to fix upon that particular ingredient on which the most valuable of its attributes depends. To fill up this void in medical literature is the object of Dr Christen's work, which we are now about to introduce to our readers; for, although six years have elapsed since it was published, yet it is very little known in this country.

In delivering our account of the manner in which Dr Christen has performed his task, we shall endeavour to lay before the profession a very full analytical display of the volume; for, as it is written in a language not very familiar to the majority of medical practitioners, our pages may be the means of not only extending the information which it contains, but of stimulating the scientific part of our brethren to investigate the history and properties of other articles of the materia medica, on a similar plan.

Dr Christen divides his subject into two parts: the *natural history* and the *pharmacology* of opium. He commences his inquiry with the natural history; and, tracing the derivation of the name *opium*, considers it, on the authority of Bontius, to be of eastern origin. The ancient inhabitants of India and Arabia called it *affian*, which was also its Egyptian name. In Persia its appellation is *affinun*, and the Moors term it *affium*. The Greeks called it *opion*, a proper diminutive, which they derive from *opos* (ὀπος) juice; adding sometimes *meconos* (μηκωνος), the juice of the poppy; or, more specifically, *kotheion* (κωδειων), the juice of the capsule. The Roman name for the drug was *lacryma papaveris*, and *opium*, by which it is now generally known in all European countries, although the Germans, little attached to innovations, still retain the name *mohnsaft* also; and the Danes *Valmnesaft*. The term *laudanum* was first applied to crude opium by Paracelsus, although it was used by the ancients for the preparations only of the drug, in particular the watery extract. It was rarely applied to denote the spirituous extract; and the *laudanum opiatum* of the Romans was a compound, of which opium was only the most active ingredient. Dr Christen refutes the opinion that the nepenthe of Homer was opium; an opinion which we were surprized to see regarded as probable by Dr Paris (*Pharmacologia*), on the ground that the nepenthe of Homer was obtained from Thebes *. That nepenthe was opium, is sup-

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* It is a curious fact, that there is no such thing as the NEPENTHE of Homer, nor, indeed, is there a noun, NEPENTHE, in the Greek language. The only passage in Homer which has any thing like it, is the one alluded to, Odyssey Δ, 220:

Helen }
" Instantly then into the wine threw } a medicine of which they drank,
Αὐτίκ' ἄρ' εἰς οἶνον βάλε φάρμακον ἔνθεν ἔπινον,

Sorrowfree and angerfree also, of evils oblivious all.
Νηπενθές τ' ἄχολόν τε, κακῶν ἐπίληθον ἁπάντων."

Paraphrased by Mr Pope thus:

" Mean time, with genial joy to warm the soul,
Bright Helen mixed a mirth inspiring bowl;
Tempered with drugs, of sovereign use to assuage
The boiling bosom of tumultuous rage;
To clear the cloudy front of wrinkled care,
And dry the tearful sluices of despair." *Transl.* iv. 301.

Our own version is as literal as the literal Mr Hamilton himself could wish it: and he who, as the cant goes, " has wasted the valuable years of his infancy over the dead languages," but ever so little, will at once perceive, that *nepen-*

ported chiefly on the opinions of Theodorus, Zwinger, and Sprengel; but Dr Christen objects to it from the fact, that the exhilarating virtues of opium are followed by unpleasant effects, which are not noticed by Homer; and he supposes it more probable, that it was the Cannabis sativa, which is so generally used in India under the name of *bang*; and which enters into the *maslah*, the celebrated inebriating compound of the Turks. The name of this compound, which we believe is a preparation of opium, Cannabis sativa, Lolium temulentum, Datura ferox, the roots of mandragora, and of the male fern, may be translated *Gift of God.* "That cannabis is the nepenthe," says Dr Christen, "is also more probable, inasmuch as every nation which employs it, besides its effect "ad lætificandum cor hominis," regards it as salutary, increasing the strength, sharpening the wit, and all the intellectual faculties, improving the appetite, and producing grateful sleep; whereas opium causes headach, costiveness, and other unpleasant results." The cannabis is employed under various forms and names in Asia and in Africa. "Adeo," concludes our author, "mortalibus necesse est atræ curæ suppressio: Asia septentrionalis id agit Agarico piperato, meridionalis opio et cannabi, Africa cannabi, Europæi diffusissimi vino et spirituosis ducunt sollicita jucunda oblivia vitæ."

The next subject of inquiry is into the sources whence opium is procured. These Dr Christen states are two, the lettuce and the poppy tribes: but as it has been lately proved that thridace, the concrete juice of the lettuce, contains no morphia, this preparation can scarcely be regarded as a variety of opium. Dr Christen, however, unacquainted with this fact, quotes Pliny, to shew that the similarity of the juice of the lettuce to opium was known to the ancients, who collected it from incisions made on the stem of the plant; but although both the garden and the wild lettuce yield a soporific juice, yet the latter only was used by them as opium. They, however, confounded under the appellation Lactuca sylvestris, two species of lactuca, the scariola and virosa, both of which possess narcotic properties. The poppy, nevertheless, has always been regarded as the source of genuine opium: but writers on materia medica have differed as to the species from which the opium of the ancients was derived. Linnæus and Murray assert that it was the oriental poppy; but our author has not been able to ascertain upon what ground they founded this opinion; and he acknowledges that he is

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thes (for there is no *nepenthe*) is merely an adjective noun, and no more the name of the drug thrown into the bowl by Helen, than *acholon* or *epilethon*, epithets applied to it in the same verse. The mistake, however absurd, is a very old one. It occurs in Theophrastus; in Pliny (xxi. 21.); in Plutarch: the learned Peter Petit wrote a whole book, entitled, "Homeri Nepenthes, sive de Helenæ medicamento;" nor has it ever been corrected before the present moment.—Edit.

equally ignorant of the authority on which Linder (*Neuste Kunde von Asien.* tom. ii.) affirms that it is made from the oriental poppy, in Hindostan; although he admits that opium, of a good quality, may be prepared from that plant, as Schiller, an apothecary of Rothenburg, experimentally proved, as well as from the red poppy (*P.* Rhœas), from which Bouldue, and afterwards Professor Alston, prepared it. The somniferous poppy of Linnæus, however, is the plant from which true opium has always been obtained.

Our author next examines the names by which the poppy has been, and still is, known. It was called *papaver* by the Romans, from *papa*, pap, because it was mixed up with pap for children who were troubled with colic. The Italians, following the Romans, call it *papavero;* the French *pavot*, and the English *poppy*. Dioscorides terms it *mekion*, Theophrastus *mekon*, and Siculus Theocritus *makan;* the Bohemians call it *mak*, the Germans *magsamen*, *magen* and *mohn*, the Belgians *maan*, the Spaniards *dormidero*, the Arabians *cascak*, *casbas* and *thaxthax*, and the Danes *valmue*.

In detailing the botanical characters of the plant, Dr Christen points out the ridiculous falsehood, related by Chardin, that the poppy grows to the height of forty feet in Persia; and is justly surprized that those who have copied this tale, should not have seen the impossibility of collecting the opium from plants of such a height, seeing that the capsule, which is the part that yields it, is terminal. He, nevertheless, notices the effect of climate in varying not only the height of the stem, but the size of the capsule. Thus, in Sweden, the head is not larger than a small plum, whilst, in Persia, it is capable of holding from three to five ounces of water. Locality, also, varies its time of flowering, which is in June and July in Europe; but in February, in the East Indies. He objects to the statements of Willdenow and others, that it is a native of southern Europe, and regards the opinion of Murray more correct, who believes that its original habitat is the warmer parts of Asia.

The method of procuring opium, says Dr Christen, has been nearly the same in all ages and all climates; in proof of which he quotes a number of authors, commencing with Pliny, whose account we will translate, as it is curious.

"This soporific is procured from the black poppy, by wounding the stem, as Diagoras relates, when it has swelled; or, according to Jollas, when the flowers are shed, at the bright hour of the day, that is, after the dew has exhaled. The incisions are made under the head and calyx; but the head itself is not cut in any manner. This juice is received on the wool of any herb; or, if the quantity be small, as in lettuces, on the nail of the thumb; but the greater supply of the poppy is inspissated, not only for its soporific quality, but if a greater quantity be collected, it is dried in the shade, and formed into particles, which are capable of producing even the sleep of death: it is called Opium."—L. 20. c. 18. "When the heads themselves and the leaves are boiled, the juice is called Meconium, and is less powerful than opium."—Ib.

Galen, however, particularly mentions the heads as the parts which are to be wounded. The first drops collected, which, in Persia, are called *gobaar*, and regarded as of a superior quality, are of a pale yellow colour; those that follow are thought to be weaker, and are almost black. Dr Christen proceeds to notice East India opium; then that obtained in Germany, by Dillenius, Schiller, and others, and brings down his account to the period of Mr Ball's efforts to produce it in England; since which time, we may add, it has been collected in very large quantities, and of most excellent quality, by Messrs Cowley and Stains, and Mr Young.

The next object of our author's inquiry is, to point out the characters of genuine opium, which he does at great length; first noticing the form of the cakes or masses in which it is imported; then its specific gravity; and, lastly, its peculiar and distinctive features.

"Externally, it is of a blackish-red colour; internally, of a reddish-yellow, yellowish-red, or reddish-brown, but never black; not shining nor glossy, except in the recent fracture, which glitters with scattered saline particles: opaque, even at the edges of the fractures; tenacious, softening when rubbed in the hand, plastic, adhering to the fingers; soft when fresh, but hard when kept; easily cut, and shivering into fragments, without noise; the odour strong and peculiar *(papaveraceus)*; narcotic, unpleasant, affecting the brain, and stupifying; the taste nauseous, and, as it were, double; at first bitter, then acrid, pungent, and impressing a sensation of heat, which continues for many minutes on the lips, palate, and tongue, and, when kept long in the mouth, it produces ulceration. It stains when moistened; and lines drawn with it on paper are yellow, cinnamon colour, or diluted brown, and interrupted. When chewed, it tinges the saliva yellowish-brown, with a greenish tint. Approached to a flame, it readily catches fire, burning with a vivid flame, without any narcotic odour, and with scarcely any odour when extinguished. It dissolves almost entirely in water, and the solution of alcohol does not render the solution turbid: it is more soluble in alcohol, and still more so in wine, ethereal spirits, alcohol holding an alkali in solution, and aromatic waters: the most valuable solution is that in diluted alcohol. Its solutions redden the vegetable test-blues, and change to black the solution of sulphate of iron.

"Opium is altered by age, baking, or boiling. It is reducible to powder when slowly dried either by heat or by cold: the powder is of a pale brownish-yellow colour; and a very moderate heat, even that of the hand, causes it again to cohere into a mass."

The following are the characters, pointed out by our author. as distinctive of bad opium:

"A deep brown, blackish, or black colour; in consistence, it is soft, plastic, unctuous or grumous, rough or friable; it is also light, of an empyreumatic odour, has a sweetish taste, more or less bitter, and scarcely acrid; when masticated, it tinges the saliva brown or black, and, when moistened, marks a brown or a continuous black line; when strained it scarcely thickens; it resembles wax; and the solution, when largely diluted, is yellow."

In mentioning the fraudulent admixtures of the drug, Dr Christen notices the following characters by which these may be detected:

"The extract of poppies is of a blackish-brown colour, hard, with a weak or empyreumatic odour, uninflammable, tinges the saliva brown, is wholly soluble in water, and the solution is rendered turbid by the addition of alcohol. Extract of Chelidonium *majus*, or *glaucium*, differs altogether in odour from opium, and the colour of the solution is yellowish-brown; that of Lactuca *virosa* has a faint smell, and a rougher aspect; that of Liquorice is more fragile, has a sweet taste, and when moistened marks a deep brown continuous line on paper; Gum arabic discovers itself by its shining property, and want of tenacity; Tragacanth by its becoming a tremulous gelatine, when digested in one part of alcohol, and two parts, or six times by weight, of water. Opium, mixed with oil, furnishes a turbid tincture; sand is discovered in it by the microscope, by crashing between the teeth, and crackling when the mass is cut with a knife, and by the sand remaining insoluble."

Having finished the consideration of the natural properties of opium, our author next enters upon the investigation of its chemical history, commencing with the experiments of Neuman in 1730, and bringing down his account to the recent and satisfactory analysis of Robiquet. The following are the components of the drug, as far as the latest experiments have determined them:

"A volatile principle (whether an oil?); gum; extractive, partly simple, partly oxidized; resin; a concrete waxy oil; gluten, analogous to the albumen of vegetating juices; caoutchouc; morphia, a peculiar alkali; a peculiar acid, which has been named meconic; sulphate of lime and of potass; alumina, and mixed vegetable fibres."

Our author notices these components separately, giving the history of the discovery of each; but it is unnecessary for us to follow him in any of these details, except as relates to the alkaline and the acid principles.

The meconic acid, discovered by Serturner in 1804, was not altogether unknown before his time. Schrover, in the 17th century, had observed, that, in precipitating a watery solution of opium with the carbonates of potass and of ammonia, effervescence was excited. Tournefort stated, that opium contained an acid, as it reddened tincture of violets, a fact which was known also to Hoffman. Others had made similar observations; but as late as 1803, Derosne regarded it as the acetic; and, in 1804, when Serturner discovered and named it, Seguin considered it an imperfect acid, approaching the malic in its characters.

" The meconic acid," says Dr Christen, " is present both in Turkey and East India opium, in the watery solution and in the spirituous, from which it is separated by barytes or acetate of lead, in the form of a precipitate, which being separated from any adhering extractive by potass, and then treated with sulphuric acid, yields the meconic acid. Instead of this method of Serturner, for procuring it, Choulant proposed the following. From the solution of opium, mixed with an excess of ammonia, and inspissated to the consistence of a syrup, separate the morphia, then add acetate or muriate of barytes, and decompose the meconate of barytes by sulphuric acid: when thus obtained, however, it is not altogether free from sulphuric acid. Robiquet employed magnesia, in a similar manner, instead of ammonia, then removing the morphia from the sediment of the opium boiled with the magnesia and water, by washing it with boiling alcohol; the residue was dissolved in sulphuric acid, and mixed with muriate of barytes, the precipitate from which being digested in very dilute sulphuric acid, yielded meconic acid, which was purified by sublimation."

The acid separated is thus described by Dr Christen:

" It is solid; and when obtained by sublimation is in the form of white, shining, tetragonous tables or plates; but when obtained by evaporation from a fluid, it is in acicular crystals, sometimes congregated in bundles, more rarely in ramifications; it is colourless, or white, friable, and has a mild acid taste, which slowly changes to a nauseous bitter. It melts at 125° centigr., then sublimes; but is decomposed in a higher temperature. It dissolves readily in water and alcohol, and unites with earthy, alkaline, and metallic bases. Some of the metallic meconates are beautifully coloured: the ferruginous, brownish-red; the golden a saturated blue; the cupreous (separated from the sulphate), an emerald green. The meconates of ammonia and of soda are acicular, those of lime prismatic, and those of potass rhomboid tables."

Our author next proceeds to the consideration of the alkaline principle of opium, which Serturner called *morphia*. He concludes that the ancients were not altogether ignorant of this salt, as they knew that saline crystals were obtained from opium.

" Wedel saw the crystalline part of opium, and called it Saline; (Opiologia, p. 70.) Frederick Hoffman observed it crystallized by cold, in the form of flowers of benzoin, and also in prismatic needles; (De Correct. Opio, § 5.) Neuman saw it, (de Opio, p. 115.) Beaume observed, in an inspissated aqueous extraction (in the proportion of one drachm from four pounds of opium to one pint), saline earthy crystals, in the form of boracic acid, or lamellar, and partly of small needles; (El. de Pharm. p. 299.) Eccard also observed it, and finally Derosne. Eccard, from the solution of opium in diluted alcohol, obtained crystals reticulately aggregate, and also in the form of prismatic needles, of a brown colour, and remarked that they were of a gummy nature; (De Analysi Opii, p. 10.) Buchols could not procure these crystals, neither from the watery extract nor from the inspissated solution."

Dr Christen seems to confound the salt of Derosne and the alkaline principle of Serturner. He describes separately the processes of Serturner, Robiquet, and Derosne, in which we need not follow him. He states the following as the diagnostic characters of morphia:

"It is solid, crystalline, the crystals being tetrahedral prisms, with a rhomboid base; more rarely single or double pyramids; sometimes it is formed in slender prisms collected into bundles; white, with a silky gloss; greasy to the touch, and friable. It is of greater specific gravity than distilled water; is inodorous; has an astringent and bitter taste, particularly the morphia precipitated by potass, or rubbed into powder, or in solution: it refracts light powerfully. It is soluble in alcohol, ether, oils, acids, but scarcely in water, 400 parts of which in a boiling state, according to Derosne, and 82, according to Choulant, are required to dissolve one part. The proportions of boiling alcohol necessary for the same solution are 36 according to Choulant, and 18, 19, and 24, according to Derosne."

These differences our author refers to differences in the purity and concentration of the alcohol, and other circumstances: and proceeds to state the combination of morphia with the acids, with all of which, except the carbonic, it unites. He next notices its combination with sulphur, and with extractive. It decomposes the salts of mercury and lead, the muriate of copper, and the sulphate of iron; but it forms a triple salt with acetate of copper. It melts when heated, and, like wax and sulphur, crystallizes in cooling. When distilled in a sufficient heat it evolves white vapours, and is deposited in the neck of the retort, in the form of a yellow oil, tenacious, of an aromatic odour, and a very sharp taste. Distilled with solution of subcarbonate of ammonia, solid subcarbonate of ammonia and carbonated hydrogen gas pass over; and the residue is a light, shining coal, of a spongy nature, of an iridescent hue. With vegetable colour, it exhibits all the characters of an alkali.

The historical and chemical part of the dissertation is concluded by some observations on the effects of the neutral salts of morphia on the animal economy, and the poisonous properties of the meconic acid.

PART II.

REVIEWS.

I. PRACTICE OF MEDICINE.

Traité de l'Auscultation Mediate, et des Maladies des Poumons et du Cœur. Par R. T. LAENNEC. Seconde Edition, entierement refondue. Paris, 1826. Tome 1re pp. 728, 2de pp. 790.

Treatise on Mediate Auscultation, and on the Diseases of the Lungs and Heart. By R. T. LAENNEC. Second Edition, Paris, 1826. Vol. 1st, pp. 728; 2d, pp. 790.

SINCE the publication of the first edition of Laennec's work in 1819, the subject of auscultation has attracted considerable attention in this country, although it has not yet been generally introduced into practice. We are not surprised at this, acquainted as we are with the difficulties to be overcome in acquiring a knowledge of, and a confidence in, the use of the stethoscope. Many make one or two trials, and then lay the instrument aside as useless. "Were a physician," says M. Laennec, "who had never practised surgery, to begin at the age of forty, and, without previous preparation, to operate for the stone, he would very probably cut some who had no stone, and not be able to find it in others who really had it, more especially if he commenced the operation with a wish to find it impracticable, as many seem to have done, who have tried auscultation." A certain degree of previous education is absolutely necessary; but there are some people deaf, and none more so than those who will not hear. In no class of disease is the diagnosis more avowedly difficult than in affections of the chest; and although we cannot venture to say that the discovery of the stethoscope has removed all obscurity, yet we certainly do regard it as a most valuable assistant in enabling us to form our opinions. The details on the art of auscultation, however, form by no means the chief merit of Mons. Laennec's work. The principal title conveys, indeed, no adequate idea of the nature of the contents, and is in fact a complete misnomer. The volumes now before us are intended to form a complete treatise on the diagnosis, morbid anatomy, and treatment of Diseases of the Thorax, and, in a pathological point of view, we consider them as by far the most valuable present which has been made to the profession in modern times;—for unwearied research, and minuteness and accuracy of observation, they stand unrivalled. The present edition differs considerably from the former. It is much enlarged, and the arrangement of the different subjects is altered. In the first, as the facts were new to the profession, the analytical method was followed throughout; in the present the synthetical is preferred, and the work has gained both in simplicity and distinctness, and much repetition is avoided. To this edition, also, the treatment of the different diseases is added.

The work is divided into three parts: the first contains an exposition of the various means we possess for the exploration of diseases of the thorax; the second, the description of the diseases of the lungs; the third, diseases of the heart.

In the first part a full detail is given of the various means imagined before the discovery of the stethoscope: percussion is particularly noticed; and the means of employing it to advantage pointed out. The author then proceeds to explain the principles of auscultation. We shall enter pretty fully into this part, both because it contains much new matter, many of the statements formerly made being verified, and errors obviated, and because we are anxious to enable our readers to appreciate the principal facts on the subject.

That the respiration is performed principally by the abdominal muscles, or accompanied with great and forced dilatation of the thorax, M. Laennec regards as signs of little value, in a diagnostic point of view; for the action of the lungs, and the dilatation of the air cells, may be perfectly natural in both cases; nor has he ever been able to observe a manifest and constant inequality in the movement of the two sides of the chest, except in cases of great effusion between the pleuræ or deformity of the chest. On the contrary, he has often seen the dilatation perfectly equal in phthisis affecting one lung, and in pleurisy and peripneumonia occupying one side. We have often seen physicians place too great reliance on the presence of these signs in the examination of patients. Percussion requires great attention, and much experience, to guard against error. The information it supplies us with is in itself extremely vague; but if its results be limited, and often doubtful, it becomes of great value when conjoined with auscultation; and we shall find that there are many important cases of disease, in which the diagnostic is derived from a comparison of the results obtained by these two methods.

Respiration.—The ready transmission of sound through solid bodies, is the principle on which mediate auscultation depends. In the healthy state, we hear, by means of the cylinder during inspiration and expiration, a slight, but extremely distinct sound, arising from the entrance of the air into, and its expulsion from, the air cells of the lungs. We may here remark, that the observer should never attempt to examine a patient till he has made himself fully acquainted with the sound produced by the respiration in a healthy person. This is constantly neglected, and yet it is of much consequence. The observer should listen attentively, and for several minutes at a time, to the respiration on the anterior part of the chest. He should then apply the cylinder over the spot where the great bronchial vessels are situated, and afterwards over the trachea. He will thus learn to distinguish the bronchial from the vesicular respiration, a distinction very important to make in all cases. When a person speaks with the tube placed over the trachea, the sound conveyed to the ear gives an adequate idea of what is meant by pectoriloquism. Over the bronchia he will hear the sound denominated *bronchophony*, a phenomenon very much resembling *pectoriloquism*, and giving rise to many mistakes. Many physicians in this country, who have not paid much attention to auscultation, are in the habit of preferring the ear, applied over the thorax, to the use of the cylinder. This is an error arising from want of experience, and the method can never lead to any important results. The ear, where it can be applied, takes in too large a space; the sound is transmitted by the whole surface in contact; and in this way the respiratory murmur may be heard, while it does not exist on the spot immediately under the ear; besides, all the nicer distinctions are lost, and the ear immediately applied is perfectly useless in the phenomena derived from the voice.

In children the respiration is loud and distinct; in the adult t is variable, being sometimes almost or altogether puerile, while in others it can only be heard with great attention. When one lung, or a part of both lungs, have become impervious from disease, the respiration frequently returns to the puerile state n the remaining sound portion. When the natural respiration s heard over every part of the chest, we are certain that there s neither effusion into the pleura, nor engorgement of the lungs. On the contrary, when the respiration cannot be heard over a certain space, we may be assured that disease exists. These are the two extremes, and between them a variety of sounds are to be met with, indicative of different diseased states.

Bronchial Respiration.—We have already remarked, the great importance of distinguishing the sound heard in inspiration, and expiration, when the instrument is placed over the larynx, trachea, and great bronchial vessels at the root of the lungs, from the real respiratory murmur, or vesicular respiration, as it may be called. This distinction was not sufficiently insisted on in the first edition of the work, and we have ourselves witnessed many serious errors, in consequence of mistakes from this cause. The bronchial respiration may be said to be drier; the slight crepitation arising from the dilatation of the air cells is wanting; and we can distinctly make out, that the air is passing through a larger space. In the natural state, it is impossible to distinguish between the vesicular respiration, and the passage of the air through the smaller bronchial tubes; but when the pulmonary tissue is compressed by pleuritic effusion, or rendered denser by inflammation, and consequently a better conductor of sound, the pulmonary cells are rendered impermeable, the vesicular murmur disappears, and is replaced by the bronchial respiration, which is distinctly heard even in the smaller bronchial passages. This most usually takes place towards the root of the lungs, but it may also occur in other points, and is very apt to lead the inexperienced into error.

Cavernous Respiration.—This has nearly the same character as the bronchial respiration, and takes place where the air enters into, and passes out of, an excavation in the pulmonary tissue. We hear clearly that the air is penetrating into a cavity of greater size than the bronchial tubes, and the accompanying phenomena will preserve us from error. It is a sign of much consequence, and ought to be particularly attended to.

Blowing Respiration.—In this variety, it seems as if, during inspiration, the air was drawn, from the ear of the observer; and blown into it, during expiration. It takes place in a large cavity situated near the surface of the lungs, or in the larger bronchial tubes, when the pulmonary tissue is indurated, or compressed. It is very easily appreciable, and is frequently met with, especially in children, and occurs of course along with the cavernous or bronchial respiration.

Auscultation of the Voice, Pectoriloquy, and Bronchophony.—When a person speaks with the instrument placed over the larynx or trachea, the voice appears to proceed through the tube directly into the ear of the observer. The same phenomenon occurs when the stethoscope is placed over a spot beneath which a cavity exists in the lungs, and this constitutes perfect pectoriloquy. It produces a sharp disagreeable feeling, and seems even to strike the ear. The voice resounds strongly under, though it does not traverse, the instrument, when placed over the superior part of the sternum, and in the situation of the great bronchial tubes. In lean persons the resonance is also great below the clavicles, between the scapula and spine, and over the superior part of the scapula, but it is scarcely marked in the natural state over the other parts of the chest.

When the pulmonary tissue is rendered denser than natural, and impermeable, in peripneumonia, or when an accumulation of tubercles has hardened the natural texture of the lungs, a similar phenomenon takes place, especially towards the root of the lungs. This is also the case in dilatation of the bronchia; but the attentive observer ought not to be deceived, even when the bronchophony approaches nearest to pectoriloquy, the voice rarely, if ever, passing entirely through the tube. The resonance is of a more diffused nature, and the cavernous respiration, is wanting. Pectoriloquy is perfect, then, when the voice traverses the cylinder, when it is exactly circumscribed, and where the signs derived from the cough, the *râle*, and the respiration coincide with it. It is imperfect when one or more of these signs are wanting. It is doubtful when the resonance is feeble, and when it cannot be distinguished from bronchophony.

The circumstances which concur to render pectoriloquy perfect, are the complete emptiness of the excavation, its communication with one or more bronchial tubes, and the increased density of the surrounding pulmonary tissue. There are cases in which its existence is not well marked, even when an excavation exists, but these we will afterwards point out. It must always be remembered, that pectoriloquy may be suspended for hours, or even days, from the obstruction of the bronchial tubes by the matter of expectoration; it is necessary, therefore, for us to repeat our examination before we decide that pectoriloquy is not present.

Egophony consists in a particular vibration of the voice, accompanying or following the articulation of words. It seems rather like the echo of the patient's voice, than the voice itself. It rarely introduces itself into the tube, and never traverses it. It is quivering and interrupted like the cry of a goat, and has many different shades and degrees. Egophony "is owing," says M. Laennec, "to the natural vibration of the voice in the bronchial tubes, transmitted through a thin and trembling layer of effused fluid, and rendered more sensible by the compression of the pulmonary tissue." It exists where a moderately abundant effusion has taken place in the chest. It may be heard from the first hour of the effusion, but is seldom very strongly marked, until the respiration has become nearly insensible, and the sound on percussion dull. When the effusion is very abundant, egophony is not heard; when the former is partly absorbed, the latter reappears. It may be heard over the whole of the affected side, or only partially, but it is most common between the vertebral column and internal edge of the scapula. It is a favourable sign, as it indicates that the pleuritic effusion is moderate in quantity. Egophony and bronchophony may exist together, in *pleuro-peripneumonia.*

Cough.—The signs to be derived from the exploration of cough, were not particularly noticed in the former edition, and we may here remark, that many of the phenomena to be described under the head *râle*, are rendered more sensible when the patient is desired to cough.

Râle.—M. Laennec includes, under the term Râle or Rattle, all the unnatural sounds which the passage of the air may produce in respiration, either when passing through liquids in the bronchial tubes or pulmonary tissue, or from a partial contraction of the air tubes themselves. The *rales* are extremely difficult to describe by words. Five principal kinds are mentioned, but the varieties are extremely numerous. The kinds are the *crepitating rale*, resembling the sound of salt when decrepitating, or still more the sound produced by compressing a healthy inflated lung, but a little stronger. There is the decided sensation of a fluid, almost as liquid as water, in the pulmonary cells, permitting the air to penetrate into them, and forming extremely minute bubbles. It is easily distinguished, and is of great importance as a sign, being pathognomic of the first stage of peripneumonia. It is also heard in edema of the lungs, and sometimes in hemoptysis; but in the two latter diseases the bubbles appear to be somewhat larger, and more humid, than in the crepitating rale of peripneumonia. This variety M. Laennec calls the *subcrepitating rale.*

The *mucous or gurgling rale* is produced by the passage of air through the matter of expectoration accumulated in the bronchial tubes, or through the tubercular matter contained in a cavity. It is heard wherever these conditions exist, but it varies in degree and intensity, and the varieties can only be described by comparing the perceptions furnished by the sense of hearing with those which the sight would give. It offers, says Laennec, most commonly the image of bubbles similar to those produced by blowing with a tube into soapy water. The ear appreciates, in the most distinct manner, the consistence of the liquid which forms the bubbles, and also their varying size, and these may be described by the terms *very great*, *great*, *middling*, *minute*, the latter coinciding with the crepitating rale, when the bubbles are extremely small and equal. The mucous rale, on the contrary, gives always the perception of very large bubbles.

"The mucous rale exists principally in pulmonary catarrh, with copious mucous secretion, in hemoptysis, and often in peripneumony and phthisis. In the first two cases, it is owing to the passage of air through mucus or blood contained in the bronchiæ: in the latter disease, it may also arise from a certain quantity of mucus or purulent matter in these tubes; but it may also take place place in excavations produced by peripneumonic abscess—by a gangrenous eschar of the lungs—or by softened tubercles. It is then that the mucous rale assumes a particular character, to which I apply the word *cavernous*. It is more abundant, larger, and takes place in a circumscribed spot, in which the cavernous cough and respiration, together with pectoriloquy, are also to be heard. It is more especially from the cough that we acquire the conviction that the rale is cavernous: it does not extend into the bronchiæ, and we feel that it is in some sort imprisoned in a cavity."

The *dry*, *sonorous*, or *snoring rale*.—Of this the varieties are numerous; it seems to take place when any cause, such as a partial inflammation, either of the mucous membrane itself, or of the surrounding pulmonary substance, contracts the opening of a bronchial branch, so as to render its opening narrower than the rest of its passage.

The *hissing* or *sibilant rale* arises from a tenacious mucus obstructing the small bronchial tubes, or the partial contraction of a bronchial tube from inflammation. These two are often found to exist together.

The *dry crepitant rale*, À GROSSES BULLES, or crackling sound, is extremely analogous to the sound of a dry bladder, when blown into. It is pathognomonic of emphysema of the lungs. All these sounds can be heard over a certain space, sometimes even to a considerable distance from the diseased spot; but a sort of vibratory feeling is always communicated to the instrument, when placed over the situation of the diseased portion.

The *metallic tinkling*, is a sound resembling that which a metallic cup gives when struck with a pin: it is heard when a patient breathes, coughs, or speaks. It depends on the vibration of air, agitated by the cough, &c. on the surface of a liquid partially filling a cavity in the chest, and can only exist in a case where a serous or purulent effusion occurs, alongst with pneumo-thorax, or in large excavations partly filled with purulent matter.

We shall pass over the article "On the application of Auscultation to many diseases not connected with the Chest," and proceed to the Second Part, on Diseases of the Lungs; and in analyzing this portion of the work, we shall constantly endeavour to present to the reader the diagnostic signs, in connection with the morbid appearances.

This part is divided into four sections: 1. Diseases of the Bronchial Tubes; 2. Affections of the Pulmonary Tissue; 3.

Accidental productions developed in the Lungs; 4. Affections of the Pleura.

Bronchial inflammation, Mons. Laennec thinks, may be divided into catarrhal inflammations—plastic inflammations, or inflammations with the formation of a false membrane—and ulcerous inflammation.

We shall first consider the varieties of bronchitis:

> "I prefer, however," says M. Laennec, "the word catarrh to bronchitis; because catarrhs form the gradation between inflammation, congestion, and purely passive fluxes; and because in certain cases of chronick catarrh, it is at least doubtful if the disease be really of an inflammatory nature."

Bronchitis, acute and chronick, is treated of under the heads of acute mucous catarrh, chronic mucous catarrh, dry catarrh, and pituitous catarrh: we have also convulsive catarrh, latent catarrh, &c. The symptoms of each are fully detailed, but we think with almost unnecessary minuteness. The greater part are merely varieties of one disease; and we are rather astonished that a pathologist so distinguished as Laennec should have insisted so much on a division of diseases, in which the morbid appearances are precisely similar. It is extremely proper that they should be described as varieties of disease arising from particular causes; but we object to so unnecessary a multiplication, where in fact no constant distinctive character exists. Bronchial, like every other inflammation, is accompanied with varying symptoms in the child and the old man, in the feeble and the robust; but we might as well found our distinctions on these circumstances, as on its greater or less violence, and on the quantity or quality of the expectoration. In the first stage of the acute mucous catarrh, there is no expectoration: in the second, it is thin and transparent: and in the third, opaque, consistent, whitish, yellowish, or lightly green. In these different characters of the expectoration, at different periods, we may already, as our author has well observed, recognize the principal varieties of the disease—the dry catarrh remaining at the first stage—the pituitous at the second—and the mucous catarrh, after passing through the two former stages, arrives at the third. The anatomical characters of this disease, are a greater or less degree of redness, with slight thickening of the mucous membrane of the bronchiæ: the affected parts are sometimes harder, more generally softer, than natural; and it is important to remark, that the redness of the bronchial membrane, and the degree of softening, are always greater the more time has elapsed between death and the period of examination. From the very commencement of the first stage of bronchitis, the loud sonorous rale is heard with the cylinder: the vibratory feeling points out the seat of the inflammation, and the extent

of the disease, and enables us to form our diagnosis accordingly; for we must constantly keep in mind, that the violence of the symptoms, and the danger of the disease, are in exact proportion to the extent of the inflammation. Where this is general in both lungs, the disease is always of a serious nature. In the second stage, when the mucous secretion is established, the mucous rale is heard. It not unfrequently happens, that, in some particular parts, the rale and sound of respiration disappear altogether; but this is merely owing to a temporary obstruction of the bronchial passages by mucus. The clear sound on percussion will serve to prevent us from falling into error from this cause. In the treatment, Laennec seems afraid of bleeding, and recommends cupping to a limited extent in preference. We have no doubt that bleeding is often injudiciously employed, and carried too far in this disease; but in the early stage it is in most cases of the greatest service. When the mucous secretion is established, and the mucous rale is heard over a considerable extent of lung, general bleeding is very detrimental: the natural cure has commenced, and we only retard its progress by the use of violent means. In this stage, however, leeches are frequently of great service.

Blisters, Laennec thinks, do more harm than good, except when the disease is passing to the chronic state.

Emetics are often extremely useful, more especially in children: in fact, in them we may often repeat them with the greatest benefit every day, or every second day.

Laennec mentions with commendation the popular practice of curing the disease by stimulants. He has often had recourse to it, and has never seen it productive of a more serious disease, but always with the best effects, when employed at the very commencement of the disease. Where no contrary indication exists, such as inflammation of the stomach and bowels, or a disease so violent as to lead us to fear peripneumonia or croup, he gives an ounce or an ounce and a half of brandy, in a warm drink, at bedtime. This is usually followed with a profuse sweat, towards morning, and an alleviation of the disease. It is repeated till the affection disappears.

Chronick mucous catarrh.—There are few diseases in which an accurate diagnosis is of more consequence than in this, as it often resembles phthisis in every symptom, and can only be distinguished from it by means of the stethoscope.

" If, after having repeatedly examined a patient, at different hours, we find neither pectoriloquy nor the gurgling of tuberculous matter, nor the cavernous respiration of a pulmonary excavation, nor the constant absence of sound and of respiration, indicating extensive tubercular affection, we have a strong presumption that the disease is only chronick catarrh. If, after a period, say of two or three months, the results obtained be always the same, our presumption is changed into certainty."

In chronick bronchitis, we meet with the mucous rale, rarely constant, and still more rarely general. The respiratory murmur can still be distinguished, but the respiration becomes often puerile. Nothing peculiar occurs in the treatment. Blisters, repeated emetics, the balsams, as also tar vapour, are mentioned as very useful. When the difficulty of breathing is very great, belladonna, or stramonium in powder, in the dose of half a grain to a grain, has often produced great and sudden relief.

Pituitous catarrh, or *Phlegmorrhagie pulmonaire*, is next treated of, and several varieties are described. In it, the expectoration is extremely abundant, colourless, transparent, spumous at the surface, and beneath resembling white of egg diluted with water. It often appears in the period of resolution in peripneumonia, and frequently accompanies edema of the lung. When this disease is fairly established, it often assumes a regular intermittent form, two attacks of cough, and expectoration, one in the morning, and the other in the evening, coming on in the twenty-four hours.—*Signs:* chest sonorous: the sonorous or sibilant rale, with sometimes a slight mucous rale.

Dry catarrh.—The symptoms are, slight dyspnea, shortness of breath, accessions of oppression for several days, followed generally in the morning with a slight pearly expectoration, often mixed with some clear mucus. When the disease is extensive, and of long duration, the accessions of oppression are often severe enough to merit the name of *asthma*. It is always chronick, and occasionally affects children. The anatomical characters are, puffiness, with a dark or violet coloured redness of the mucous membrane. The thickening is sometimes so great as entirely to obstruct the smaller bronchial tubes, which always contain a small quantity of a very viscous matter.—*Signs:* Sound of the chest perfectly clear; respiratory murmur none, or almost none, in the affected part; but these points vary; and often where the respiratory sound was entirely awanting, it will be heard perfect at the end of a few hours. Dry catarrh, of long continuance, is very apt to produce an emphysematous state of the lungs.

The indications of cure are, to remove the inflammatory engorgement, and to diminish the viscosity of the matter of expectoration.

"Whatever our theory may be," says Laennec, "I can safely say, that I have succeeded in producing great relief by the use of the following means: almond soap in the form of pills, in the dose of from half a drachm to a drachm, twice a day, often with gum ammoniac; warm sea baths, or the sulphureous baths; the internal use of carbonate of soda or potash, twelve to thirty six grains a day."

Hooping cough.—Laennec considers this as partly a congestive, partly a spasmodic disease; but he makes somewhat unaccountably no allusion to its morbid anatomy. We have had several opportunities of examining the bodies of children who have sunk under this disease, and in whom its intermittent character was preserved to the last, and we have invariably found inflammation in the trachea and larger bronchial tubes, along with a very tenacious yellowish coloured mucus. Between the attacks, the respiratory murmur is either in some places very feeble or altogether wanting: in other parts it is strongly puerile, mixed with the sibilant or sonorous rale.—*Cure:* Laennec trusts chiefly to emetics, and, after their use, he considers the belladonna, in doses of half a grain, as by far the most useful of all remedies in relieving this disease.

Some interesting remarks follow on symptomatick catarrhs. "Nothing proves," he says, "that the most intense or long continued catarrh ever produces any other disease, except emphysema of the lungs, or dilatation of the bronchiæ; while almost every other affection of the lungs or pleura is followed or accompanied by catarrh."

Phthisis he considers as never a consequence of catarrh. He has discovered by auscultation the constant existence of pulmonary catarrh during the whole course of continued fevers. At the commencement it is latent, and only to be recognised by the cylinder; but the crisis is accompanied by expectoration.

Bronchial inflammation precedes or accompanies all the exanthematous diseases, and their principal danger generally depends upon it. In rubeola, it is constant, and often continues long after the eruption. A chronic peripneumony frequently also follows this disease, converting the lungs gradually into a yellow, caseous like substance. But more of this hereafter.

Suffocative catarrh.—This is merely an extension of the inflammatory affection to the whole pulmonary mucous membrane, and hardly deserved a separate article. In the aged, it constitutes the peripneumonia notha; and is also very common and very fatal in young children. He thinks bleeding may be useful in patients of a sanguine habit; but he has never seen it indicated in children. We have often derived the most striking benefit from leeches, even in cases which seemed desperate. After their employment, emetics are highly serviceable.

Dilatation of the Bronchiæ.—This peculiar morbid alteration is not an uncommon consequence of chronic bronchitis: it has only of late attracted the attention of pathologists. It exists in various degrees, sometimes affecting only a single tube, at others the whole of a lung. The bronchial tubes preserve their cylindrical form and usual appearance, being only dilated in size. Sometimes a single branch is dilated successively, so as to form cavities of considerable size; and these can occasionally be distinguished from a tuberculous excavation, converted into fistulæ, only by great attention. It is obvious, that in a case of this nature, we shall have pectoriloquy, along with the cavernous rale, and respiration; and it is only by an attentive examination of all of the signs and symptoms, that we can distinguish it from phthisis. When the dilatation is only in a moderate degree, we find a diffused bronchophony.

Croup.—In the croup of children, the false membrane commences almost always in the larynx, trachea, and bronchiæ, and very seldom extends upwards beyond the glottis. In the adult, on the contrary, it commences most frequently in the tonsils and pharynx, and extends downwards.

"Mercurial frictions, so employed as quickly to produce salivation, have been extremely successful; and, in the present state of the science, I do not think that any physician should neglect this means, along with bleeding and emetics. Mercurial frictions are also extremely useful in many other inflammatory diseases, more particularly in hepatitis and peritonitis."

We pass over a chapter on bronchial hemorrhage, on bronchial polypus, and bronchial ulceration, as containing nothing of very peculiar interest, and proceed to the consideration of the diseases contained in the second section, AFFECTIONS OF THE PULMONARY TISSUE. As it is impossible for us to touch on all the interesting subjects treated of in this part of the work, we shall confine our remarks principally to such diseases as are more immediately connected with, and illustrate the practice of, auscultation.

Emphysema of the lungs consists of two kinds, the *vesicular* or pulmonary, properly so called, and the *interlobular* emphysema. We have already remarked, that dry catarrh occasionally resembles, or rather assumes the form of asthma; pulmonary emphysema is also very common, and usually passes under the name of nervous asthma. It may be considered as merely an exaggeration of the natural state, the air-cells becoming larger, and less uniform in size. Sometimes the lungs resemble those of the frog tribe. In some cases the cells are not merely dilated, but ruptured, forming, by their union, a cell capable of containing a bean. The small bronchial tubes are also dilated; in fact, as this disease depends on the same cause as dilatation of the bronchia, we can easily conceive that they are often combined. On opening the thorax the lungs do not collapse, their tissue is a little firmer, the air escapes much more slowly than natural, and the crepitation approaches nearer to the sound of air passing slowly from a pair of bellows.

It generally appears as a consequence of dry chronick catarrh: it may make its attack in infancy, and continue during the course of a long life. The principal character is dyspnea, which is almost habitual; increased at times, but without any regularity either in return or duration. There is no fever; in aggravated cases the skin assumes often a pale dull colour, with a slight violet shade in some places. There is generally an habitual cough, with slight expectoration. When only one side is affected, that side becomes larger, the intercostal spaces being increased; the sound on percussion is clearer than on the healthy side. The sound of respiration, with the stethoscope, is either awanting, or extremely weak, over the affected part. From time to time we hear a slight, sibilant rale. It is most easily confounded with the dry catarrh, but, in doubtful cases, the long existence of the disease, the habitual intensity of the dyspnea, and the attacks of asthma, which come on from time to time, may alone enable us to affirm with certainty, that the air-cells are dilated. The extreme weakness of the respiratory murmur, and its absolute disappearance in some parts, will add to the value of these signs. There is also a rounded form of the chest, and a slight lividity of the lips; and when the disease is arrived at a great height, we hear the crackling rale, viz. when the patient coughs or inspires, we perceive a sound, similar to that of air blown into half dried cellular tissue.

Interlobular Emphysema.—Pulmonary emphysema is a disease essentially chronic in its nature; the interlobular appears almost instantaneously. It is a true rupture of the air-cells, with an infiltration of air into the cellular bands, which separate the lobules. Children are much more subject to this affection than adults. It frequently takes place when they are attacked with croup, or intense acute bronchitis, where the bronchial obstruction is very great. The signs are the crackling rale *(rale crepitant sec, à grosses bulles)*, which is invariably present.

The chapters on pulmonary apoplexy and edema of the lungs contain nothing which has not been already before the public; we shall therefore confine our remarks to peripneumonia, phthisis, and pleurisy, both because they are the most common diseases, and because in them the greatest assistance is derived from the use of the stethoscope.

Peripneumonia, considered as to its anatomical characters, presents three very distinct and striking degrees of diseased change, engorgement, hepatization, and purulent infiltration. These are extremely well described by M. Laennec, but as we trust they are already familiarly known to our readers, we shall only quote the description given of the third stage, as we shall have occasion to allude to it in a subsequent part of the review. "The pulmonary tissue still preserves the same hardness and granular aspect of hepatization, but it assumes a pale yellowish straw colour." At first little yellowish points are perceived, these soon unite together, and the lung becomes of an uniform yellow colour. When cut into, there flows from the surface of the incisions, a yellowish, opaque, viscous, evidently purulent matter. The substance of the lung is softer and moister than in the hepatized state. The granular structure disappears as the formation of purulent matter proceeds. This state Laennec looks upon as the suppuration of the lung; true pulmonary abscess he considers as extremely rare. "In many hundred dissections which I have made," he says, "I have only five or six times met with collections of pus in an inflamed lung." We are somewhat surprised at this, as we met with it three times during the course of last winter. M. Laennec, however, in a subsequent page, allows, that it may occur more frequently in some epidemics than in others. "In 1823," he says, "I met with more than twenty cases of peripneumonia which terminated in abscess, only two of these died; but the existence of a cavity in the other cases was positively ascertained, by the presence of pectoriloquy and the cavernous rale.' We would here caution our readers against a very common error, viz. the taking it for granted, that when the presence of pectoriloquy is announced, that the disease must inevitably terminate fatally. That this is not the case, either in peripneumonia or in phthisis, our author, we think, has clearly proved. Laennec is inclined to believe, that, even from the third degree, or that of purulent infiltration, the lung can return to its natural state. We cannot agree with him in this. No proof is adduced of it; nor does any thing analogous take place in any other structure of the body.

The success of our treatment in pneumonia depends greatly on our being able to recognize the disease from its very commencement. The stethoscope is here invaluable. The disease is frequently latent, or it exists as a complication of other diseases, where the symptoms do not sufficiently indicate its presence. In children it is extremely rapid in its progress, and the usual signs are very ambiguous; the infant swallows the matter of expectoration, and the disease occasionally terminates fatally even before its existence is suspected. The crepitating rale, which we have already described, is the pathognomonic sign of the first stage of peripneumonia. It is present from the very commencement. The extent over which it is heard, indicates the extent of the disease. At first, the respiratory murmur is also distinct; but, in proportion as the disease proceeds, the natural sound diminishes, and the crepitating rale is more rarely heard; the bubbles are of less equal size, and more humid;

at last, both the respiratory murmur and crepitating rale disappear, and hepatization has taken place. The sound on percussion is dull at this period, if the diseased portion be of considerable extent, or if it do not occupy the centre of the lung. If the hepatization be near the surface, or near the root of the lungs, bronchophony now joins itself to the other signs, and is accompanied with the bronchial respiration and bronchial cough. When the hepatized portion surrounds a considerable bronchial tube, the air, on inspiration, seems to be blown into the ear. Pulmonary suppuration is ascertained by the mucous rale; and abscess is distinguished by pectoriloquy, the cavernous respiration, and the gurgling sound. As the increase of the disease is marked by the extension of the crepitating rale, so resolution is certainly taking place when we hear the crepitation in a part where it had formerly ceased; as the cure proceeds, the crepitation is gradually replaced by the natural respiratory murmur. When a considerable portion of the lung is hepatized, the puerile respiration is heard in the part remaining sound. The character of the expectorated matter, M. Laennec considers as the only other pathognomonic sign of peripneumonia. In the first stage, it is semitransparent, very glutinous, containing bubbles of air, and so tenacious as to adhere to the bottom or sides of vessels; the colour is usually some shade of red, though it is occasionally greenish, saffron, or orange; but, in all cases, the colour is evidently owing to its intimate combination with blood. In the second stage, it is more or less viscous, vitriform, or formed of a whitish or yellowish semiopake mucus. In the third stage, it is more decidedly mucous, with yellowish streaks. Mons. Andral considers an expectoration, which, he says, resembles the juice of prunes, as characteristick of the third stage. Laennec does not agree with him in this, but regards it merely as a discharge from the gums of old cachectick subjects.

Gangrene of the lungs is an extremely rare occurrence, and our author hardly thinks that it can be considered as a termination of inflammation, and still less as an effect of its intensity; he rather regards it as approaching the nature of a disease essentially gangrenous, such as anthrax, or the malignant pustule.

Treatment.—Our author enters very fully into the treatment of peripneumonia. Bleeding, he observes, has been used from the earliest periods. The ancients bled to syncope, at the commencement of the disease; and he remarks that the English still follow this practice, which he is far from condemning. In other parts of Europe, the practice is to bleed to eight or sixteen ounces on the first accession, and to repeat it every day, or even twice a day, if the inflammatory symptoms do not yield. After the first five or six days the bleedings are more rarely repeated.

We have often seen a greater quantity of blood abstracted in this way by Italian physicians, than we usually find necessary in England. In some cases, or even epidemics, Mr Laennec condemns bleeding; and in bad cases of fever (*fievres pernicieuses*) complicated with peripneumonia, he trusts to bark in large doses. Blisters he considers as of little service. His own practice he describes in the following words:

"The moment I recognise the existence of peripneumonia, I bleed to eight or sixteen ounces, and this I seldom repeat, except in patients attacked with disease of the heart, or threatened with apoplexy. I have even several times cured pneumonia without bleeding, but I commonly do not deprive myself of this powerful means, except in debilitated subjects *. I now give a grain of tartar emetic, in two ounces and a half of orange water, sweetened with a little syrup; and this I repeat every second hour, till I have given six doses, when I leave the patient to repose, if the symptoms be not very urgent. But if the inflammation be advanced, if the head or both lungs be affected, and if the oppression be great, I continue the tartar emetic every second hour, till the symptoms yield, and till the amelioration be confirmed by the stethoscope. I have in aggravated cases given even a grain and a half, two grains, or two grains and a half, as a dose, but always in the same quantity of fluid. Generally on the first day the patient vomits two or three times, and has two or three alvine evacuations; but on the subsequent days it is often necessary to give a lavement."

If the dose is supported with difficulty, M. Laennec adds a few drops of a preparation of opium (*sirop diacode*); but in general the effects of the tartar emetic, in relieving the disease, are most striking when it produces no evacuation. This plan, our author says, may be employed in all stages of the disease; and he mentions, that whenever amendment has commenced, it proceeds without relapse; whereas by bleeding, he says, we obtain a temporary relief, but are obliged to repeat it again in six or eight hours, and so on for five or six times. He has never seen a patient die of acute pneumonia, who had taken the tartar emetic long enough to experience its effects. He continues this treatment as long as the *tolerance* lasts, and as long as there exist traces of the crepitant rale. He has employed the same method in other inflammatory diseases, but he considers it as most useful in acute rheumatism, which it generally cuts short in six or seven days. Gastro-enteritis, as it occurs in fevers, he considers as no contraindication to its use.

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* In speaking of emetics, Mr Laennec mentions, that Dumangin, at La Charité, very seldom bled, but trusted to emetics, which he gave every day, or every second day, and yet his practice was as successful as that of Corvisart, who was a strong advocate for bleeding. He tells the anecdote of Sérane, who followed the plan of Riviere (Riverius) with much success. His son, newly returned from college, persuaded him that he bled too little, and trusted too much to emetics; after a time, he exclaimed, "Mon fils, vous m'avez gaté." You have made me a worse physician than I was.

We have seen the tartar emetic employed by Laennec, and can bear witness to the accuracy of his statements, so far as regards the effects of large doses. We have had recourse to it also in our own practice, but do not trust so exclusively to it as Laennec. After one copious bleeding, we order the tartar emetic, which usually produces vomiting at first. If the symptoms continue moderate, the dose is repeated; but if oppression, &c. reappears, we bleed till relief be obtained. In this way we have seldom occasion to bleed oftener than twice, and we have given from twelve to eighteen grains a day, without any particular effect.

Phthisis.—"Whatever," says Laennec, "may be the form under which tuberculous matter developes itself, it presents, in its origin, the appearance of a greyish, semitransparent matter, which becomes gradually yellow, opake, and very dense. It softens at last, and acquires a fluidity nearly equal to that of pus; it is then expelled from the lungs, and leaves a cavity, known under the name of a tuberculous excavation."

Nothing new is contained in this chapter respecting the anatomical character or formation of tubercles. The most common form is the miliary tubercle, which at first appears under the form of greyish white semitransparent grains, which gradually change to a yellow colour: at length they unite together, and form a considerable mass. We confess we are not so well satisfied with the nature of the morbid states described under the heads of grey and yellow infiltration. The grey, says our author, may show itself in a lung where no tubercles exist, though this is very rare. He regards it as a kind of tuberculous infiltration, which may appear in large semitransparent masses, without the previous development of tubercles: a lung thus affected is dense, humid, impermeable to air, of a more or less deep greyish colour; its cut surface is somewhat polished, homogeneous, without the least appearance of pulmonary tissue. In this there appear by degrees yellow opake spots, which gradually increase, till the whole is changed into the yellow tuberculous mass. He describes also a reddish jelly looking infiltration, which passes very rapidly to the yellow state. This state he considers as in no way connected with inflammation; but, in our opinion, investigation is still required on the subject.

We have more than once met with a case of the following nature. A young person, after an acute eruptive disease, has continued to labour under an affection of the lungs for several months; at length purulent expectoration appears, and he sinks. The dissection we copy from our notes. "Anterior and superior portion of the upper lobe of the left lung healthy and crepitant, inferiorly the texture denser, firmer, slightly crepitant, of a bright red colour, cells filled with a jelly looking serum; in the very lowest portion, the pulmonary tissue dense, granular, and fleshy, not in the slightest degree crepitant, interspersed here and there with little whitish-yellow masses. A large cavity occupying the superior portion of the lower lobe; remaining part almost entirely converted into a yellowish firm caseous mass; small portions however still retaining the red fleshy appearance." In cases of this kind, we believe that the red hepatization is gradually converted into the yellowish mass. It agrees in no respect with the purulent infiltration of Laennec, and yet we could prove it, did our limits allow us, to be a result of inflammation.

Mr Laennec then considers the question, "Are real tubercles ever the result of inflammation?" He answers decidedly in the negative, and combats with much keenness the opinions of Broussais on this point.

Our author next enquires, Is the cure of phthisis possible? A cure in the first stage he considers as a mere illusion; but many facts have proved to his satisfaction that a patient may recover after the tubercles have been softened and evacuated. The cavity then becomes lined with a membrane which is gradually converted into a cyst of cartilaginous firmness. Several bronchial tubes generally open into it, and this he calls a pulmonary fistula, and considers it as a sort of cicatrix. It is no uncommon thing to meet with cavities of this kind in the lungs, along with tuberculous matter, and tubercles in their different states; and it is quite obvious, that it is only in cases where few tubercles have primarily existed, that a cure can be looked for. Tubercles often remain stationary for many years. To the causes of phthisis, Mr Laennec has added little new. He considers the inhabitants of the sea-coast as much less liable to the disease than inlanders. Melancholy, and the depressing passions, he regards as the most certain occasional causes.

Physical Signs.—All the common symptoms are equivocal. The cylinder is the only certain means of ascertaining the presence of phthisis. Tubercles in their first stage cannot be recognized till a considerable accumulation has taken place. They are to be looked for most frequently in the superior part of the lungs, more particularly in the right. The sound is then dull, and a diffuse bronchophony is discovered. When the tubercles are softened, the gurgling sound on coughing strikes the ear at intervals; as the cavity empties itself, the respiration becomes cavernous, the cavernous rale is heard, and pectoriloquy takes the place of bronchophony. A perfect knowledge of the use and application of the stethoscope can only be acquired by practice; pectoriloquy, however, when once heard, can never be mistaken. We may mention, that, when a cavity is very large, pectoriloquy sometimes disappears, and is replaced by the metallick tinkling, especially if the excavation contains only a small quantity of liquid, and is in free communication with the bronchia.

Treatment.—Our author repeats the melancholy list of means which have all at different times been regarded as certain remedies in phthisis, and which have all been proved to be equally inefficacious. We have shewn, he says in conclusion, that nature may cure phthisis; but we have also shewn that art cannot.

The Fourth Section contains affections of the Pleura.

Pleurisy.—Mr Laennec has made several divisions of this disease, which, as they depend more on its duration, and on the accidents which may follow it, than on its nature, we shall not enter into. Thickening of the pleura has never appeared to our author very evident as an effect of inflammation. Pleurisy is accompanied with an exhalation of two kinds of matter, the one serous (serosity); the other semiconcrete, forming the false membrane, which, when the inflammation is general, covers every part of the pleura, as well that which is spread over the lungs, as that lining the thorax. A kind of shut sack is thus formed containing the serosity, and having its sides generally connected by transverse bands or laminæ. The false membrane varies in thickness and consistence. The serosity is generally of a yellow straw colour, containing fragments of concrete matter, and bearing altogether some resemblance to unclarified whey. The serous effusion, and the false membrane, bear no constant proportion to each other. The more violent the inflammation, the more firm and extensive the membrane. In feeble and exhausted subjects, the serous effusion is extremely abundant, and approaches nearly to the nature of hydrothorax. In a few very rare cases, no effusion seems to take place; but where the pleuritic affection is the primary and principal disease, it occurs from the very commencement. When the disease terminates favourably, the serosity is absorbed, and the concrete matter gradually converted into cellular membrane. The lung itself is merely compressed, and pushed towards the vertebral column and mediastinum. Our author describes in a separate article, a hemorrhagick pleurisy, in which the fluid effused is more or less tinged with blood, sometimes even containing a considerable quantity of that fluid. In these cases, the serosity is always more abundant than in simple pleurisy, and the tendency to cure by absorption is less. In these cases, also, and in some others of long duration, the concrete lymph is converted into an extremely firm semitransparent membrane. of a bluish colour and fibrous organization; no longer capable of being converted into cellular membrane, as the liquid disappears, the lung, long compressed and firmly bound down, does not dilate with sufficient quickness to follow the progress of absorption. The ribs therefore approach each other, and the chest diminishes in size on the affected side, till the pleura costalis and pulmonalis come into contact. Our author has occasionally seen the chest manifestly dilated, even in acute pleurisy of two or three days' duration.

Gangrene of the pleura very seldom occurs, except in consequence of the rupture of a gangrenous abscess of the lungs into the cavity of the pleura.

Signs.—No disease is more easily recognized by the stethoscope than pleurisy. As soon as the effusion has taken place, the sound, on percussion, becomes dull, and the respiratory murmur is either extremely feeble, or altogether awanting. When the fluid is very abundant, it is altogether absent, except for a space along the vertebral column, and under the clavicles; and this taking place after a few hours' existence of disease, is a perfectly pathognomonic sign of pleurisy. As the absorption takes place, we hear the respiratory murmur gradually returning to its natural state. We have already made some remarks on egophony, which is the characteristic sign of this disease, and which is always present when the effusion is moderate in quantity. We shall only here remark, that it is always met with when the effusion has arrived at a certain height, disappears when it becomes very abundant, and reappears as the absorption proceeds, till it finally vanishes. Along with egophony we often meet also with bronchophony and bronchial respiration.

Chronic Pleurisy.—The anatomical characters are the same in the acute disease. It may either follow as a consequence of acute pleurisy, or be of a chronic nature from its commencement. In the latter case, there is little tendency to natural cure, or the conversion of the false membrane into cellular tissue: the effused fluid increases in quantity,—the affected side enlarges,—the lung is compressed, and bound down by the false membranes.

This state constitutes the empyema of surgeons.

The signs which, taken along with the common symptoms, are decisive of its existence, are, want of respiration, and dull sounds on percussion. In some cases, in which the effused fluid has been absorbed, and the disease has terminated favourably, the sound has continued dull, and the size of the affected side diminished to fully an inch.

Treatment.—After one or two bleedings, our author prefers cupping, repeated till the pain disappears, to general bloodletting; rigorous abstinence the first three or four days, afterwards at least liquid nourishment; and this he considers as the best means for preventing the disease from passing to the chronic state. As long as the pain and fever continue, he employs the emetic tartar in the same manner as in pneumonia. Mercurial frictions he considers as of great service in promoting absorption. Blisters he thinks useful in the chronic disease, but hurtful in the acute.

The operation for empyema is not usually successful, and this arises generally from the diseased condition of the lung, which, from its state of compression, returns with difficulty to its natural state; and it is often also affected with tuberculous disease. Even the existence of pectoriloquy in the superior part of the lung of the affected side, should not deter us from the operation, if the other lung be sound. Our first number contained some decisive instances of the advantage of this paracentesis of the chest, from the enlightened pen of our friend Dr Hastings of Worcester.

In what our author calls acute empyema, in which the effusion is abundant from the first, and increases so rapidly as to threaten suffocation, it may be employed with the greatest hope of success. The point of election in this disease should be between the fifth and sixth ribs, a little anterior to the digitations of the serratus magnus. In proportion as the practice of auscultation becomes general, the operation will be more successfully performed, as at present it is usually had recourse to at too late a period of the disease.

Hydrothorax is extremely rare as an idiopathic disease, and extremely common as a symptomatic one. From what has been already said, the reader will be readily enabled to use the cylinder as a means of discovery in this as well as in several other diseases not particularly dwelt upon. A long and interesting chapter on pneumothorax terminates this part of the work. The application of the stethoscope to the diseases of the heart, and a most valuable and excellent description of the morbid states of that organ, forms a separate and highly valuable portion of the work before us; but this we must reserve for a future occasion. We cannot conclude this very imperfect analysis, without recommending the original work most strongly to the attention of the reader.

Researches concerning the Seat of Cerebral Alterations. By M. Pinel *junior*, D. M. P.

A Young and learned physician, M. Bouillaud, has lately presented to the Academy of Medicine an interesting memoir *, the conclusions of which, deduced from facts collected by the author, and from observations recorded in different works, tend to demonstrate, that, in cerebral alterations, the loss of speech is determined by a lesion, more or less deep, of the anterior lobes of the brain. Having made some observations on cerebral affections, followed by the abolition of the faculty of speech, the seat of which was, more or less, distant from the anterior part of the brain, I considered it my duty to publish them, less to modify the conclusions of M. Bouillaud, than to add some additional facts to the pathological physiology of the brain.

Case I.

A woman, named Camuseau, had never experienced any derangement in her health. Being the mother of many children, she began, towards the age of 60 years, to manifest vague fears about her future support; feeling her strength daily diminishing she dreaded being soon subjected to poverty, and reduced to die of hunger. At 62 years of age she was struck with an attack of apoplexy; the paralysis extended to the inferior extremities, to the right arm, and to the tongue; and, during five months, she could neither speak nor make use of her limbs. After this period she recovered the use of her speech; the right arm likewise recovered its mobility; but the inferior extremities remained paralysed.

At 63 years of age this woman was conducted to the Salpetrière; she had attempted to shorten her days, by a cut with a knife in the throat; and her relations affirm, that disgust of life only began to manifest itself some months after the attack of paralysis.

Two months after her admission into the hospital she was seized, for the first time, with an attack of epilepsy, the attacks of which became more and more frequent during the three years which she passed in the ward assigned to idiotic patients.

She died the 6th January 1820, during the night, without any symptom indicating that her end was so near.

Opening of the Body.—The exterior of the body shewed the natural appearance, and remarkable lustiness. The cicatrix of the neck, about two inches in length, extended across, from the superior and posterior lateral part of the thyroid cartilage, to the middle of the opposite side of the neck; the wound had only affected the integuments and subjacent cellular tissue.

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* See this work reviewed, in our Second Number, p. 386–389.

Cranium thick, eburneous, and strongly injected. The dura mater, the arachnoid, and the right lobe of the brain, shewed nothing remarkable, only the cerebral substance was more firm there than in its natural state.

The left lobe of the cerebrum inclosed, *in its posterior part, a little behind and above the ventricle*, within the body of the white substance, a cicatrix, which was yellowish on the exterior, red and brown in the interior, containing in its centre a sort of whitish kernel, of a strong appearance, not organised, hard and resisting; its diameter, in each direction, being from five to six lines.

The remainder of this lobe, as well as the cerebellum and the spinal cord, participated in the hardness and consistence observed in the right lobe of the cerebrum. The left lung was emphysematous; the heart enormous; there was ossification of the valves of the aorta, and serum in the pericardium and right side of the thorax.

The liver presented a very remarkable hypertrophy; it occupied all the epigastric region, and a great part of the left hypochondrium; however, it was healthy in the interior as well as exterior. The spleen was small, but healthy; the stomach was inflamed towards its small curvature; the duodenum and the intestines exhibited some traces of injection; the uterus inclosed a polypous prolongation, which extended beyond the neck of it; the left fallopian tube and ovary were totally wanting.

Remarks.—What is most singular in this case, is the seat of the sanguine effusion, evident traces of which were found in the posterior part of the left ventricle, and which determined in the patient, at the age of 62 years, the paralytic phenomena which we have described, and, above all, the paralysis of the tongue. As this woman had only had one attack of apoplexy, and as her brain, when examined very attentively, did not present any other local or sensible lesions, there can exist no doubt regarding the cause of the symptoms of paralysis that she shewed.

It is probable that the sanguine effusion, which took place in the interior of the cerebral substance, ended by being gradually absorbed, and had left there nothing but a slight cicatrix. This absorption easily explained the disappearance of many paralytic phenomena; the inferior extremities alone remaining paralysed. This phenomenon appeared to me the more astonishing, considering the seat of the effusion, as I have almost always observed that the lesion of the posterior lobes determines, above all, the paralysis of the superior members; a new proof of the reserve that we should use in drawing inductions from lesions of the brain.

The cause of the sudden death may be found in the very large development of the heart. Let us especially remark that the action of cold during the night is very much against these disorders, and becomes often the cause of fatal syncope. In the hospital for old men almost daily examples are met with, during winter, of a similar catastrophe.

I do not consider as morbid the red injection, of which many traces were observed in the alimentary canal: I would rather suppose, that it resulted from the stagnation of blood, determined by the abrupt suspension of the action of the heart.

We may conclude, by remarking, that this woman had borne many children, notwithstanding the total absence of the left fallopian tube and ovary.

Case II.

——— Maillet, of middle stature, had menstruated at 19 years of age; she enjoyed very good health until the age of 45 years; at which period she was attacked by a furious mania. Conducted to the Salpetrière, the 9th of July 1809, she shewed all the symptoms of the most acute mania, which lasted with the same degree of intensity for six months; to this state of agitation succeeded a tranquil state of derangement.

In 1811 she experienced anew, during about two months, the strongest maniacal agitation; and to which, in the same manner, again succeeded a state of derangement and apathy. In 1812 she was affected with a slight attack of paralysis; there was incoherence observable in her recollection; *she had much trouble in finding and articulating the words she wished to pronounce*; she could not move but with difficulty. During many years this state lasted, and degenerated into a complete derangement, and state of inertia.

This woman died the 7th March 1820, in a state of general marasmus.

Inspection of the Body.—Extreme thinness. Cranium white, thin, breaking easily. The dura mater was white, thin and semitransparent. The arachnoid membrane was healthy, and contained no serum. The cerebral substance was very white; the grey substance was confounded nearly in its colour with the white substance, which presented a general and very sensible density.

The annular protuberance, broken through the middle, contained, in the middle of it, towards the median line, a brownish cicatrix, bounded in its interior by false membranes, hard and vi-

brating under the scalpel, about three or four lines in diameter, every way.

The cerebellum was small, flabby and injected. The spinal cord shewed nothing remarkable.

The right lung, in a state of induration and livid hepatization, was covered over with albuminous membranes. This side of the thorax contained much sero-purulent liquid.

The abdominal organs presented nothing worthy of remark.

Observations.—There were found in this case, as in that which preceded it, traces of sanguineous effusion, which, in 1812, determined the paralytic affection felt by the patient. Its seat, in the annular protuberance, was very remarkable. Its effects were to produce a paralysis nearly general; slight, it is true, because the effusion was inconsiderable, but which extended to all the limbs as well as to the tongue.

The hepatization of the right lung leads us to suppose, that the sanguineous congestion was very recent. There was no symptom, during life, to cause a suspicion of it. Percussion, or rather the application of the stethoscope, would have given information of its presence. It may be seen by this example, that the deepest affections of the principal organs may be, and are, often latent in insane persons.

CASE III.

Marie Louise Mignot, aged 65 years, of a very robust temperament, had been remarked, among the women of La Salpetrière, for her activity, and for the externals of a careful education. This woman, who had complained for some time that she felt an uneasiness, which she could not describe, was seized, on the 23d October 1820, with a sudden attack of paralysis. She was carried to the infirmary.

The organic functions appeared little changed. The face was natural; the pupils were dilated and immoveable. The right limbs were half paralysed. The paralysis, especially, affected the deep flexor muscles of the hand and the leg; in such a manner that the hand was strongly bent back, and still executed some movements in this direction, while the patient was obliged to employ the opposite hand, to close that which was thus morbidly affected. The leg, in a similar manner, could not remain bent, except when it was held, and became straight again as soon as it was left free. *The tongue was also paralysed. The patient could not articulate any sound.* In other respects her intellectual faculties were not at all affected. She replied, by very expressive signs and gestures, to the questions which were addressed to her. She at times grew angry, that her right limbs and her tongue would not fulfil the desire she had to act or speak.

On the 16th November, the 22d day of her disorder, this woman began to articulate the names of *Monsieur, Madame*. the paralysis of the right limbs disappeared.

Fifteen days later she was dismissed completely convalescent There, however, remained a very sensible constraint in the tongue; and when this patient endeavoured to speak rather quick, or for a length of time, she stammered, and was soon obliged to stop.

Six months after her leaving the infirmary she was brought there again, for a very lively pain in the left side. When examined attentively, she shewed all the symptoms of a very acute pneumonia, which was combated by a severe antiphlogistic treatment. Some departures from the prescribed regimen occasioned a relapse a few months after. This woman did not announce this renewal of her disorder, from the fear she had of being transferred from her dormitory to the infirmary. Whilst she had no appetite, she experienced nightly sweatings, and an obstinate diarrhea. At the expiration of a month she shewed all the symptoms of a phthisis, already far advanced, and ended by yielding to her disorder, after many months of languor, and a gradual decay.

Opening of the Body.—Cranium thick, injected. The arachnoid membrane was lifted up by the presence of a very great quantity of serum. After having detached this membrane, I discovered, in the *superior and rather lateral part of the left hemisphere of the brain*, a small cavity, which had destroyed, in this place, a cerebral circumvolution. This cavity was lined with a lemon-coloured membrane, hard, and very well organized; it penetrated deeply into the white substance, which, round about it, was more hard, and resolved itself into a granulated form. The remainder of the cerebrum, as well as the cerebellum, shewed nothing remarkable.

The right lung adhered to the ribs; it was hard, easily torn, and exhibited, in the interior, a great quantity of tubercles, some hard, others in a state of suppuration. The upper part contained seven or eight cavities of a middle size, filled with pus.

The small intestines were filled with blackish ulcerations.

Remarks.—In this case the paralysis of the right limbs had this singularity, that the deep flexor muscles, along with the tongue, were only affected. The seat of the cerebral lesion does but little explain a phenomenon like this. We may remark, however, that the alteration seems to have penetrated from the xterior to the interior of the brain, and only in a circumscribed pace; that the understanding remained almost sound in the nidst of this disorder; that the mobility of the flexor muscles uickly returned, but that the tongue continued to be under restraint in its movements.

As to the affection of the lung, a pneumonia, well cured, night be observed to have reappeared under the influence of a leparture from her regimen, to have passed to a chronic state, nd to have degenerated into phthisis.

It may be seen, from the preceding observations, that the lestruction of speech has not been determined by the lesion of *he anterior lobes of the brain*, and that this lesion has had *different seats.* I find in my note-book another no less curious ase: the anterior part of the brain being profoundly disorganzed, the patient, notwithstanding, retained the faculty of speech. It is as follows:

Case IV.

Marie Gobet, aged 78 years, having menstruated at 14 years of age, ceased at the age of 39. Towards the critical period she was subject to very abundant uterine hemorrhages. Having been admitted, for two years, as an indigent patient in La Salpetrière, she felt, during the night of the 24th June 1821, vertigo, followed by loss of understanding, and paralysis of the right limbs. Face stupid, shewing astonishment, colour of the skin natural; partial sweats in the back and the thorax. The right limbs were completely immovable, and insensible to the strongest excitations. Mobility of both pupils. The cornea appeared covered with a kind of cloudiness. The pulse was slow, soft, and irregular; the respiration protracted and rather loud. The dejections were involuntary; the intellectual functions were almost entirely destroyed; her singing was incoherent; her speech reserved. The patient, however, replied sufficiently well to some questions, but it was necessary to speak very loud to her. Her memory shewed this singularity, that she recollected every circumstance which related to her disorder, but could not recollect anterior events.

This state continued, without variation, until the 7th July, when there supervened involuntary and tetanic movements in the left limbs. There were furious paroxysms, with vociferations during the night.

The right pupil became immoveable.

On the 15th July, constant heaviness, accompanied, from time to time, by some cries. The skin became of an earthy feel; the respiration hurried; the pulse weak and very quick. The patient fell many times from her bed, uttering piercing cries. She sank after two days of agony.

Dissection.—Brain injected. The left lobe presented, in its anterior part, near and above the orbitar arch, a disorganization of the cerebral substance, which was reduced to a form similar to the lees of wine, in which were found parts not organized, of a yellowish appearance. A species of yellowish cyst was found in the superior part of this altered substance, which contained a gelatinous serum, traversed by a great number of blood-vessels; the change appeared to penetrate into the ventricle through its anterior part. It was full of a reddish serum.

The right lobe of the brain was also greatly disorganized in its anterior part; it had the appearance of being in a state of suppuration, and was reduced to a sort of pulp, which flowed as soon as the arachnoid membrane was raised. This alteration penetrated deeply towards the ventricle, and extended superiorly to the cortical substance, and even to the superior part of the brain. The remainder of this lobe was much injected, but of a common consistence.

The back part of the brain was very bulky and soft.

The right lung was hepatized in its inferior part. The heart was very voluminous: the coats of the left ventricle presented many ossifications, and the orifice of the aorta was strongly retracted.

The abdominal viscera shewed nothing remarkable.

Remarks.—If the most prominent symptoms of this disorder are compared with the alterations discovered in the dead subject, it will be seen that the first attack of paralysis was determined by a sanguineous effusion, the traces of which existed in the anterior part of the lobe. We have seen in the other cases, effusions entirely absorbed, leaving nothing in the brain but a slight cicatrix. In the present case, the work of absorption had scarcely commenced; the false membrane had begun to be organized, but it contained a very great quantity of altered blood, mixed with portions of destroyed cerebral substance. From the 24th June to the 5th July the symptoms unremittingly continued; these tetanic movements in all the left limbs indicated that the right lobe was the seat of a violent inflammation, the traces of which were found in the anterior position of this lobe. This case shewed the two most serious affections of the brain, the apoplexy and the cerebral, which were each of them characterised by particular symptoms; the first by the paralysis of the right side, and the second by the tetanic trembling which announced its commencement. This last affection, by more deeply disorganising the brain, would, without doubt, have ended by occasioning the rupture and hemorrhage of some bloodvessels. It may be presumed that this series of phenomena took place in the opposite lobe.

It must be remarked, that this woman was almost constantly delirious, and even spoke, although both the anterior lobes were deeply affected.

These facts sufficiently prove, that lesions of the anterior portions of the cerebrum do not constantly annihilate the use of speech; and that the faculty of expressing sensations may be destroyed by alterations, the seat of which being in the brain is known to vary. Whilst I ought to remark, that, in six cases which I possess, and which have shewed this phenomenon, the morbid affections were met with towards the anterior lobes, I have also seen, in other cases, hemorrhages in the corpus striatum produce it in different degrees. In other respects, it is very important to distinguish the lesions which destroy the functions of a portion of the cerebrum (as in hemorrhages by compressing this cerebral portion) from those which attack directly the part which presides over these functions.

This study is the more difficult, because the structure of the brain is yet far from being well known; and because the greater the number of pathological facts which we collect, the less we find the results to be constant and identical, as far as regards the symptoms which are produced by the seat of the local affections of the brain.

Transactions of the Medico-Chirurgical Society of Edinburgh, instituted May 1. 1821. Vol. II. with 5 Plates, pp. 412. Black, Edinburgh, 1826. *Resumed from our last.*

IT is not good that man should be alone; and he stands in need of helpmates in other than his merely domestick relations. His wisdom, not less than his joys and sorrows, is bettered by communication; his ideas, however shrewd and penetrating, acquire a breadth, and, we might almost say, a generosity of expansion from intercourse with his fellow men. Where *he* has been obliged to stop short, another has advanced. What to *him* has remained a paradox, has to another been a self-evident axiom: and, on the contrary, the seemingly valueless abstract truth, which another has discovered and neglected, *he* instantly seizes upon as a great leading principle, and enriches with it human knowledge, in a thousand applications, unthought of by its discoverer.

It is from a conviction of the advantages of this description, to be derived from social intercourse, that the whole individuals of a tribe, in small states, and the members of a *caste*, profession, or common pursuit, in larger ones, are occasionally so much disposed to congregate for the purpose of discussing the subjects of their mutual solicitude, whatever these may happen to be. Philosophers and coal-hewers, physicians and four-in-hand men, all have their stated periods for mutual consultation; and for drawing from the communications suggested by their common interest, those maxims or rules, which thus receive the authoritative stamp of the wisdom of the aggregate.

The degree of zeal with which professional men are actuated by this sentiment, has always, in our lucubrations, given us high views of the purity of the medical character. They, of all the orders or occupations into which the human race is divided, can benefit least by fellowship, or proxy,—whilst they have every thing to fear from a comparison with a rival, of which the result shall prove unfavourable. Yet, in defiance of motives like these, that seem to aim at their very existence, their degree of repute with the publick, we find the medical profession not only stand in the foremost rank at the formation of societies for the improvement of knowledge in general, but to have been the first men of a learned profession, who were lured, by the attractions of science, to form regular societies for the discussion of its principles, and the advancement of its lights. Willis, Goddart, and Glisson, are names scarcely less famous now than when they laid the foundation of the Royal Society of London; Bartholin is still known for his writings, as well as for the medical society which he formed at Copenhagen; and, to come more directly to the fruit of such associations, who is there that has not heard of the first Monro, and the Edinburgh Medical Essays, or of the elder Hunter, and the London Medical Observations? The generous devotion with which these great men endeavoured to kindle and keep alive the sacred flame of literature, in bosoms that were but too apt to shrink from the toil, and hazard, of publication, is in itself highly meritorious: but if we consider the seducing publick favour and lucrative practice which all of them enjoyed, we shall find that the time and pains which they thus bestowed, besides being rescued from inglorious sloth, or luxury, were actually a sacrifice—a patient, voluntary sacrifice—which few of the boasted benefactors of mankind would have been inclined to make.

Did we conceive ourselves speaking to other than medical men, we should explain the nature of the "Transactions," and other writings, of such associations; but even the most alien to medical studies will at once perceive, that they must chiefly consist of records of extraordinary appearances occurring in morbid, as well as healthy, human beings; or of the various remedial means which art has devised for the extinction of disease.

There was a society of this kind formed in London, in the ear 1805, which took the appellation of the Medico-Chirurgial Society of London; and that denominated, and still denominates, the volumes which it publishes at longer or shorter inervals, "Medico-Chirurgical Transactions." The first volume of these came out in 1809, and as it contained some highly nteresting papers, mostly from the *elite* of the profession in that great metropolis, it also acquired to its succeeding brethren a degree of patronage from the publick, to which they have not always been entitled to lay claim from their intrinsick merits.

Be this as it may, we believe it was principally from the imitative sentiment, originating in exaggerated ideas of the success and utility of the London association, that a similar society, likewise to be denominated the Medico-Chirurgical Society, as if the very name carried prosperity along with it, was formed in Edinburgh in the year 1821. Other motives may have concurred; but this is not the place to unravel the web of domestick policy, and the mass of respectable practitioners who added their names to the list of the society, were, we believe, chiefly influenced by the utility which had already been realized by the cognominate establishment in London.

In 1824, the first volume of the Edinburgh Medico-Chirurgical Transactions made its appearance, and certainly, without considering the great disproportion of the individual papers, astonished every one at the general weight and importance of its contents. It might, indeed, be very fairly compared with most of the rival volumes of the same name from the metropolis, and exceeded the largest of them in point of size, amounting to 700 octavo pages, composed of twenty-six original papers, averaging twenty-seven pages each.

The second volume of the same series is now before us, and falls off considerably in respect of magnitude. The second volume consists of but 412 pages, though of twenty-seven papers, which therefore average only fifteen pages each, or almost one half less. We should be extremely sorry for it, but such is the nature of human institutions, that we will not feel surprised if the third volume shall exhibit a still greater defalcation. At the commencement of a patriotick undertaking of this kind, the active, the warm-hearted,—and the ingenious,—who are generally comprehended in both, are all on the alert, and their choicest repositories are ransacked, their most interesting style, most cogent arguments, are put in requisition, to adorn and honour the child of their election. By-and-by, however, enthusiasm cools,—the love of ease suggests a measure to labours, which yield but a barren, thriftless praise,—petty jealousies and enmities creep in among the few who always must guide the many; and the *people*, the ordinary sailing practitioners, let without compass or rudder, soon here, as every where else, lose sight of the purpose which brought them together.

But there are other fundamental causes of the dissolution of all such societies, which lie much deeper in the elements of our nature. Men fall sick and die,—who, even if succeeded by others, will leave no representative of their zeal or their energy behind them. The honour of an entry into such a society depends entirely upon the character of the individual members who compose that association; it is no *grade* acknowledged by civil society; and confers far less consequence on its holder than the possession of the lowest degree enjoyed by any member of any liberal profession. Thus, unless fresh blood be perpetually infused into societies of this description, the bond which held their fickle elements together becomes insensibly dissolved, and *A* falls off from the society where he derived honour indeed from the friendship and countenance of *B*, but would yield it, rather than receive it, from *C*. If we add to all this, that there is no ostensible interest to be promoted by continuing in such institutions, but, on the contrary, a sacrifice of time and money, we shall understand, why, of all that have hitherto been established, dissolution, sooner or later, has been the consequence. Moreover, the bulk of medical men have an aversion to writing. *Their* business is an affair of thought and reflection, and involves a complexity of combinations, a calculation of probabilities, which not only are never expressed, but frequently defy expression. The velocity of thought itself, with which they are habituated to glance from the sign to the thing signified, in other words, from the phenomenon to its complicated cause, and thence again to other concatenations, is unfavourable to the habit of elaborate or graceful diction; and a somewhat embarrassed elocution is as proverbial a characteristick of a physician, as it has always been of mathematicians, gamesters, and generals. The "*cunctatores, et magna molientes*,"—rarely shine in the nice combination of words, or in adjusting the *tournures* of sentences; and an education which cultivates the taste sufficiently to convey a consciousness of this deficiency; and a judgment, which truly estimates its insignificance, which knows to despise the parrot-like talent* of culling words, that deftly tickle the ear, in mellow recitative, and serve but to fascinate the mind's eye with unsubstantial shadows, in place of solid thought;—such a taste, and such a judgment, will always more than repress the passion of authorship in the great majority of professional men. Besides, the more experienced part of the profession are generally the most engaged,—the unemployed young and inexperienced. The length of time, too, which must elapse before their communication can appear in a volume of Transactions, naturally induces the medical men, who have wound up their energies to the writing point, to prefer some periodical for its insertion. Many keep no record of their practice, and when a long time elapses between composition and publication, numberless valuable *addenda* are forgot, and absolutely lost to the public for ever. In the periodicals, an observation or discovery deemed worthy of record, is registered in the order of time, and amongst its contemporary papers; but were that, or any other of equal importance, after being publickly read at any Society's meeting, to be laid aside in order to wait a few years, till a sufficient volume of "Transactions" were collected; there would be much reason to apprehend, that more than one competitor for the honour of the discovery might appear in the interval, in the monthly Medical Journals, which, for the facility of publication they afford alone, ought to be encouraged by every friend to science. Moreover, a writer in a work of this kind, has not the excuse for negligent composition, under which he shields himself in the more rapid production of a journal; and thus it is that he is oftener attacked by reviewers, than the writers in journals are, and is also more obnoxious to such attacks, from being out of the sanctuary which editorial courtesy generally extends to the former. It is no small triumph for a shy nervous man, to have brought himself up to the determination

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* "To write tolerable verses, or a good letter," says a modern reviewer, "to tell a good story—or any story in a good style—is a trick, which belongs entirely to that apish dexterity which amuses us in players or buffoons, and is as little akin to the inventiveness, judgment, or sagacity, that constitute TRUE GENIUS, as are the expedite clothes-shifting mummeries of Matthews and Alexandre, in our theatres, to the sublimities of a Shakespeare, a Milton, or a Byron. It is indeed the *want* of these fundamental attributes which is made to entitle every aspirant that has once arrived at sufficient imitative dexterity to figure in the pages of a magazine, to

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lay claim to the immunities accorded by an indulgent world to the eccentricities of *Genius!* while, in fact, it is the very paucity of the elements of genius, that has given origin to his follies; for the imitative faculty is most generally found in greatest perfection, where the former are extremely limited; "the strongest imaginations," says Locke, (ii. 123.) "being usually in the weakest heads." We, too, have known something of these *gifted personages* in our time; and can conscientiously declare, that nine-tenths of all their eccentricity, and vice, and *gaucherie*, vulgarly ascribed to the overpowering influence of genius, was, in reality, owing to want of common sense." In the medical man every circumstance of this luminous observation is reversed; with him *common sense*, *prudence*, *inventiveness of expedient*, and *clear conception* of the probable sources of the phenomena he has to regulate, *memory*, *judgment*, *decision*, are in perpetual requisition; but *imitation*, *imaginativeness without judgment*, and the elegancies of a *verbal memory*, are endowments which, if he possess from the bounty of nature, must remain with him like the statue in the marble, uncultivated by art or exercise, and uncalled for by necessity. "Morbos autem, non eloquentia, sed remediis curari,"—is the first and truest axiom which he learns, and the last he should forget.—*Cels. Præf.* 9.

of reading his paper, or even of hearing it read, before what he knows to be an audience of superior talent. But to have it printed in this state, in a work, regarding the elegance or accuracy of which, no one, who understands the subject, is personally interested, where it must stand like a foil, by the profound and elegant monography of some learned Professor; this is alone a feeling which gradually inclines the writing part of learned associations to prefer publishing, with others, in periodicals. Nay, there may be some members of a profession which must live by its fees, who likewise prefer the chance of recompence from the publishers of the periodical journals, to the unprofitable gratification of appearing, once in three years, in good company; and as this last is all the possible advantage that can be attained by contributing to "Transactions," we think we have rendered a very rational account of the detumescence of those of the Medico-Chirurgical Society of Edinburgh, in this second volume. The same reasoning applies to the Transactions of all learned Societies, from the venerable and truly Royal Society of London, down even to the most insignificant that records its proceedings. In fine, we have thought it right to guess at the probable causes which threaten to dry up a source of great improvement to medical science, and one from which it will be found we have drawn so freely in many parts of the present Number, confident that the importance of the articles will afford a sufficient apology to all concerned. To know the cause of an evil, we are told, is half its cure.

Instructions to Mothers and Nurses on the Management of Children in Health and Disease; comprehending Directions for Regulating their Diet, Dress, Exercise, and Medicine; with a variety of Prescriptions adapted to the Use of the Nursery, and an Index to Medical Terms. By J. KENNEDY, M. D. Glasgow, 1825. Glasgow and London, 12mo. pp. 327.

A MEDICAL publication from the great mechanical city in the west, is quite a treat. It is in fact a matter of such rare occurrence, that were it not for the occasional reprint of a celebrated octavo on midwifery, we should be inclined to think, not only that there is no zeal for the advancement of science among our brethren in that quarter, but that they are even incapable of committing its results to writing. Although such apathy is not quite so disreputable as manufacturing defamatory pamphlets, yet it is discreditable to men who enjoy the advantage of so extensive a field for the cultivation of every department of the profession, not to communicate more frequently to the public the result of their observations.

We are ready, however, to do our brethren of the west the justice to acknowledge, that when we are favoured with their observations, they are generally such as are well worthy of perusal. In this light we view the little volume before us, which appears to be composed with care, contains, in a condensed state, much sound philosophical matter, and shows our author to be a man of discernment, extensive reading, and deep reflection. To this eulogium, however, we are bound to append certain qualifications. In the first place, our author has displayed so much learning in his publication, as to render it almost unintelligible to those for whom it is intended; secondly, we do not hesitate to assert, that Dr Kennedy deals rather mnch in the marvellous; thirdly, his observations are not altogether void of contradiction; and, fourthly, he appears to us desirous to be thought young, a foible somewhat excusable in a lady, but improper, nay most imprudent, in an author.

Had this volume been addressed to the fathers, and to the medical attendants of families, rather than to mothers and nurses, we should have suffered it to pass without any serious comment; for, to most of them, our author's lore would be as comprehensible, as his matter is excellent. For the female part of the community, however, it certainly is far too learned; and we therefore fear, that until there shall exist as great a mania among our fair countrywomen for the study of anatomy and physiology, as there prevails at present for those of chemistry and botany, the labours of Dr Kennedy, interesting as their object appears to be, will be completely lost to the more immediate guardians of the nursery. We proceed to point out a few of our author's offences against good taste, which we doubt not will atone for our seeming asperity, by the favourable changes to be expected from it, in his forthcoming works.

Among the first subjects noticed by our erudite author, is conception, and here we have a long account of the primary formation and aspect of the human embryo. Now, we can scarcely maintain our gravity, when we find a man of Dr Kennedy's good sense and years, telling out to matrons and nurses a long story *in print* on so obscure a subject as the process by which a human being is formed and developed. Every person who has been in the way of attending to it, must have remarked how solicitous females are regarding the proper formation of the fetus, and its safety at the time of birth; but although the sex are accused of being full of curiosity, yet we never hear any of them express their anxiety to become acquainted with the manner in which it is originally formed, its primary aspect, or its progress to maturation; no, not even females of the better ranks of life, who, from their superior education, might be thought the most likely of their sex to comprehend any thing of this subject.

In support of our second charge against the author, we call the attention of our readers to the following passages:—

> " Notwithstanding,—as experiments have shewn,—the eye, in infants, is perfectly formed, and capable of admitting the impressions of light; yet for many days they do not exhibit manifest signs of enjoying distinct vision."

The best is to come.

> " About the fourth day of their age they begin to smile and to recognise their mother, and thereby evince the first sign of possessing intelligence, that exclusive and sublime inheritance of the human race,—for, to smile or laugh denotes the knowledge or certain perception of what imparts satisfaction and delight to rational creatures."

We are at a loss to comprehend what Dr Kennedy means by asserting, that children smile, in token of recognising their moethers, so early as the fourth day after birth. If, by smiling, our author means squalling, we shall admit that he is right so far; and if, in asserting that the infant knows its mother so soon after birth, it is meant that he takes the nipple when offered to him, it must be allowed that a young puppy will do the same, and yet, among all his misdemeanours, the poor brute has never been accused of having made such serious inroads upon the province of higher intelligences. Now, after informing us that the young of the human species exhibit such extraordinary marks of intelligence so soon after birth, we must ask Dr Kennedy how this is accomplished, since we are told in pages 26 and 27, " that the organs of vision, smell, and hearing, are by no means perfect for some time at first." This must also of course be effected by the organ of smiling, or squalling, for our author, in page 27, says, " it is certain that recently born children have the power of exerting it (taste) with some degree of activity."

As additional examples of contradiction, we think the following passages will satisfy our readers:—

> " Its organs of sense are quiescent,—its functions of respiration, assimilation, and digestion, remain inactive;—most of the secretions are suspended. Nevertheless, it lives, and grows, and moves:—it feels wants, and experiences desires; and, in the exercise of instinctive movement, expresses impatience of external impression,—manifests consciousness of individual entity."

If its organs of sense were quiescent, how could it be sensible of external impression? We know well that its organs of sense are not quiescent, for the mere application of the hand upon the mother's abdomen will cause the fetus to move. In page 26, our author says,

> " Persons who assert that infants see objects double, or reversed, or smaller than is natural, state a hypothetical assumption which no fact has yet been discovered, either to elucidate or confirm."

In the quotation which immediately precedes this, we are told, that the fetus in utero " feels wants and desires." For our own part, we must modestly confess our total ignorance of any method by which either of these points can be ascertained; and to deny the one or support the other, can be viewed in no other light than as a strong instance of precipitance in judgment. We trust it will come to the knowledge of our author, that we shall be most impatient to learn by what means he has succeeded in determining that the fetus *in utero* feels wants and desires. If by the organ of hearing, we must regret, and we are sure the lovers of music will also, that a gentleman of so acute and correct an ear, had not been reared under the tuition of Mozart and other great performers, instead of spending his time in the nursery, descanting to old women upon the fearful and wonderful fabric of man.

Two features distinguish the writings of young authors, viz. the frequent use of cramp terms, and a slight mixture of pedantry. We know very well that Dr Kennedy was not born yesterday, and why he has suffered himself to commit the errors to which we have alluded, we are at a loss to understand, unless to inspire the profession with a hope, that, as he advances in years, they may expect that he will also advance in improvement, and that his *Female Works*, advertised " ready for Press," will be infinitely superior to that under review. Dr Kennedy has undertaken to write a work, which, from the object it professes, should be popular; but instead of this, we find it interspersed with terms which are not to be found even among the numerous illustrations in Tod's Johnson, viz. *Agitative*, *Butyric*, *Contagioned*, *Embryonic*, *Hibernating*, *Intertropical*, *Rythm*, &c.

Important to obstinate Children.

> " A ʒj of rhubarb in powder, sprinkled on the abdomen of a child under ten years of age, will generally excite the bowels."

In the present state of medical science, it is not necessary to inform the profession that there are many drugs which, when applied to the stomach, will affect the system; and this mode of using some of the most powerful of them, possesses, under particular circumstances, many advantages over their exhibition by the mouth; but in regard to rhubarb, it is so exceedingly mild in all its qualities, that we should scarcely think of using it in any other way than by the mouth. It is so benign in its operation when taken internally, that we are indeed somewhat sceptical whether it possess a sensible effect, even when used in form of poultice as recommended by our author. When treating "spoiled children," to speak in the language of the nursery, we should recommend to the profession, however, to put Dr Kennedy's discovery to the test of experiment, as these patients are often so unmanageable that it is almost impossible to accomplish the internal exhibition of medicine.

We are reluctantly compelled to bring to a conclusion our observations on Dr Kennedy's production, and probably some of our readers may think that we have already said too much: but there are yet many parts of it that we have passed in silence which would deserve severe animadversion. We certainly cannot say much for our author's industry in the nursery. When this publication was announced, we looked forward with great satisfaction for something which we thought would embrace every improvement connected with the subject of which it professes to treat, and fill up what may almost be considered a blank in the medical literature of this country; but find it neither so useful nor so easily understood by those to whom it is addressed, as the work of Dr Underwood. It has, however, much new matter, is seldom wrong, and forms a cheap companion for the nursery.

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1. *Traité des Convulsions, chez les Femmes Enceintes, en Travail, et en Couche.* Par Antoine Miguel. Paris, 1824. 8vo. p. 164.
2. *Considerations sur les Convulsions qui attaquent les Femmes Enceintes.* Par M. Chaussier, Medecin en Chef de la Maison D'Accouchement à Paris. Deuxieme edit. 1824. 8vo. p. 23.

The danger attending an attack of convulsions, and their tendency to occur when once they have taken place, during pregnancy, labour, or confinement, is such, that we are happy to take up the above essays, with the view of introducing the subject to our readers; and the more so, because, by our own obstetrical writers, the subject, although so very important, has been treated in a cursory manner; the observations are few, and scattered at a distance through the records of societies, and through our periodical publications and journals.

It is rare that these affections occur during pregnancy previous to the time of quickening; the rising of the womb out of the pelvis into the abdominal cavity is frequently attended with decided fainting, more especially in first pregnancies. In irritable and delicate females, the nervous impression conveyed to the sensorium occasionally produces a true convulsion.

When the uterus rises out of the canal of the pelvis into the abdominal cavity, the changes which take place in the organ itself are very considerable; as it becomes freed from its situation within an unyielding bony circle, it is placed in a free cavity, and acquires room for its high vascular action and increasing distention. The fluid cavities produced by elongations of the peritoneum, situated before and behind the uterus, are gradually obliterated; and those portions of the small intestines which rested within the superior aperture of the pelvis, are necessarily compelled to occupy the lateral and superior parts of the abdominal cavity. At the period the uterus rises thus out of the pelvis, it would seem to acquire an increase of irritability and sensibility. Either the motions of the child have been hitherto so feeble as to be imperceptible to the mother, and have suddenly acquired vigour, or the organ has shewn a suddenly increased sensibility to its motions.

The enlargement which the uterus has been undergoing, has been confined till now to the fundus and body; but at this period the cervix begins to undergo a process of obliteration. The whole period of pregnancy, of which conception, development and expulsion may be considered as successive stages, is one of high irritation and increased vascular action. Such a state of the nervous and vascular systems under any circumstances, has a tendency to induce convulsions, especially when attended with high excitement of the mind, and determination of blood to the brain.

Syncope with slight convulsion, hysterick convulsion, or the true epileptick convulsion, rarely take place at the period of quickening; and the kind, the degree, and the tendency to recur, of these concomitants, are influenced by the age, temperament, and habits of the individual.

As the function of the fundus and body of the uterus in labour, differs from that of the cervix and os uteri, so also do these portions of the organ appear to differ in their sensibility and irritability. During pregnancy, the action of the fundus and body when excited, are expulsatory, that of the cervix and os uteri passively resisting, or disposed to dilate. The fundus, body and cervix distend gradually during pregnancy, but the fundus and body distend with less cerebral irritation than the cervix, as is shewn by the greater tendency to convulsions after the middle of the fourth month, than at an earlier period. As the cervix appears to be a more irritable part of the organ than the body, so does the os uteri appear to be more irritable than the cervix. Patients predisposed to convulsion during pregnancy, frequently escape the actual attack, till the os uteri begins to dilate; and, *it is not unlikely*, that, in a system thus predisposed, *the irritation of the os uteri produced by vaginal examinations*, in the commencement of labour, however delicately and lightly executed, may become *the immediate exciting cause of the puerperal convulsion.*

That the os uteri is more irritable than any other part of the organ, is in conformity with the function of other hollow muscular parts having exterior outlets: in all these, the parietes of the cavity shew their resistance to distention, by inconvenience observable at their sphincters; and irritation of their sphincters constantly give a tendency to action in their body. Although dilatation of the cervix and os uteri most commonly goes on with little inconvenience, yet, whenever predisposition to convulsive affections exist, this irritation has a great tendency to bring them into action. That these convulsions are most frequently found in first pregnancies, may in some measure be attributed to the moral situation of the female. First pregnancies, with few exceptions, are attended with high mental excitement, and in the more private moments of the individual, with considerable alarm and anxiety as to the result. It is not therefore surprising, that we should occasionally see irregularities in the cerebral and nervous function, requiring only a slight irritation to establish convulsive disease.

The causes of diseased actions are rarely found operating singly, and when disease has occurred, although it be defined in its character, it is modified in its appearances by many circumstances. Atmospheric influences have undoubtedly great effect in inducing the convulsive diseases of pregnancy and labour. In the very hot weather closing the summer of 1825, they were more than usually frequent; and determination of blood to the head was very prevalent, as was also hysteria, among young females. In the practice of a large lying-in charity, several cases of puerperal convulsions occurred in the immediate neighbourhood of each other; this would seem to shew, that not only the state of the atmosphere, but certain circumstances of local situation, may and do combine to excite the disease. So far as the observations of the writer tend to shew, these circumstances were the occupation of single rooms for the purpose of general domestic economy and for sleeping, situated in close, narrow, and ill ventilated streets, or crowded courts.

The convulsive predisposition may be attended with a scanty and irregular flow of blood to the brain, or with an increased, but irregular supply. In the former case, the puerperal convulsion simulates no disease so closely as the idiopathick epilepsy.

As many of the partial convulsive affections of pregnancy are induced by change from an horizontal to an erect position, particularly the morning retching and vomiting; so, in some instances, the general convulsion is induced, and females fall down immediately upon rising from bed, or during the process of dressing.

Although, in many instances, puerperal convulsion comes on without any mark of fulness in the head; nevertheless the attacks are rarely repeated often, but such a state of congestion of the brain is induced, as increases the tendency to a fatal termination. As all convulsive diseases have a tendency to recur; and as these diseases have also a uniform tendency to propagate the convulsive action to contiguous organs; it most commonly happens, that, when once they have taken place and been repeated, they continue to recur with shorter intervals and greater violence.

In making examinations after death, we are very liable to mistake effects for causes: the fulness of the vessels of the pia mater, and plexus choroides, and the slight effusion we find within the ventricles, although undoubtedly presenting here as effects, have been thought to be satisfactory evidences of the cause of the disease. When the state of the pulmonary organs and heart during a convulsion are considered, it must be obvious, that the accumulation in these organs must necessarily induce accumulation in the vessels of the head; but these vessels are in a state of congestion simply, not of high action. When blood is accumulated in the head, to a greater extent than the organization of the vessels can bear, they become ruptured, and pour out blood, or they are relieved by an effusion of serum. If the termination is fatal, the patients uniformly die with marks of compression of the brain; if they recover, the injury done within the head is shewn by more or less of paralysis, by a feeble and incorrect perception and judgment, and more particularly by an enfeebled memory.

When the patient is of a full habit, with determination of blood to the head, the face becomes turgid during the attack; the eyes are protruded, the carotid arteries beat violently, the pulse at the wrist is full and throbbing, and the patient lies more in coma than sleep, with stertorous breathing; under such circumstances, the epileptick character is mixed with the apoplectick, the danger of effusion within the cranium is extreme, and the patient can only be saved by early, copious and frequent depletion. In the intervals of the fit, these patients rouse imperfectly, they moan, are restless, sigh, and frequently lift the hand unconsciously to the head.

But fulness of the vessels of the head alone does not induce convulsive disease, something more is required; this something we are at a loss to describe or identify, and we clothe our ignorance of its real character, by giving it the term cerebral or nervous irritation. If accumulation of blood within the head were alone sufficient to induce these convulsions, we should see them appear more frequently at the close of labour, when the respiration is suspended, to aid the involuntary effort of bearing down. Many females at this period express their fears of rupturing a bloodvessel, and where patients affected with bronchocele have hard labour, the fulness of the head is very extreme.

As the convulsions of pregnancy rarely cease to recur when they have once taken place, till the contents of the uterus are expelled, it would be of the greatest consequence if we were in possession of means, by which their attack might be prevented. But, if we were in possession of such powers, their use would require a more decided knowledge of the symptoms preceding the attack, than we possess at present. All the marks noted by authors are imperfect in application, and we frequently receive our first intimation by the presence of the convulsions. In such cases, our object is to prevent a repetition of the attack, which does in fact constitute the treatment of the disease.

The work of Mons. Miguel is the substance of an essay, to which was adjudged a prize, proposed by the Society of Medicine at Paris for the year 1820. The essay of M. Chaussier is an attempt to introduce a new practice, by which it is said the os uteri will be relaxed, and the expulsion of the child facilitated in the puerperal convulsion.

Mons. Miguel divides his work into four chapters. The first treating of convulsions in general; the second of the convulsions occurring during pregnancy, and the two succeeding chapters upon convulsions taking place during labour, and after the expulsion of the uterine contents. His three last chapters are illustrated with numerous cases detailed at large, from the most respectable obstetrical authorities, many of which are not known, or very slightly, in our own country.

Our author states every spontaneous, morbid, and unnatural contraction of the muscular fibre to be convulsion; he considers spasm and convulsion to be degrees or varieties of the same action; spasm being a contraction of the muscular fibre having no perceptible relaxation, as in tetanus; convulsion having contraction alternating with relaxation. The latter, which is more especially the subject before him, he divides into two kinds, as they affect the voluntary or involuntary muscles; and, again following the observation of Pulley, that the convulsive action is frequently of a mixed kind, simultaneously affecting both sets of organs, he has established a third division which he calls mixed.

As the muscles contract through the influence of other organs, it becomes necessary to search for the cause of the convulsion, in the

state of parts influencing the natural action. Muscular contraction, whether voluntary or involuntary, depends upon the influence of the brain or spinal marrow, conveyed through the medium of the nerves. We are justified, therefore, in inferring, that the convulsive action of muscles, is only the exterior mark of irritation or derangement, in some portion of the cerebral or spinal systems. Of the more interior condition of these organs during convulsion we are ignorant, but we are enabled to establish two distinct sources of the external action; the first, when the causes act directly upon the brain itself, and are succeeded by convulsions; the second, where the brain, healthy in itself, suffers through the medium of some other organ, or systems of organs, and reacts on the muscular system, as if it were primarily injured. In the one instance the convulsions may be considered idiopathick, in the other symptomatick.

In some females the brain appears to be very susceptible of such a deranged function as induces convulsion. The nerves, which are the connecting links betwixt the brain and muscles, appear also to be equally susceptible of irritation, or to possess an unusual aptitude to receive and to convey impressions from their terminations to the brain, and also from the brain to their terminations. Such a state of the medullary organs only requires an exciting cause to bring them into action. Emotions of mind, passions, external irritations, and especially, according to our author, the coexistence of vascular fulness and action, develope convulsion. Such a state of nervous irritation and vascular fulness are the constant concomitants of pregnancy.

In the convulsions attending gestation or labour, there does not appear to be any thing peculiarly differing from the convulsions arising from other irritations, and under other circumstances. But if the accidental state of pregnancy does not change the essential nature of the convulsive motion, it nevertheless modifies its appearance and its treatment. All those circumstances which tend to produce convulsions under ordinary circumstances, act equally towards their production during pregnancy. At this time the ordinary causes are more liable to produce their effects, because they are assisted by an irritation, however natural, yet progressively increasing, which irritation is the dilatation of the womb. In first pregnancies a new function is brought into action, under such moral and physical constitutions as are extremely favourable to the development of convulsions. The growth and enlargement of the fetus in utero requires increased activity, not only in the functions of the womb, but in the vascular system generally: The womb incessantly stimulated by the actions going on in its cavity, is in a state of continual irritation. In many instances the uterus receives the stimulus unfavourably, and is excited into an action which expels the source of irritation; in others, the impression made upon the organ has its termination in convulsions.

Convulsive actions have received different names according to the organs which they attack. When they attack the muscles of the extremities or those of the trunk, they assume the generic name of convulsions; when convulsive motions attack the stomach, they are termed retching or vomiting; when they attack the heart or the diaphragm, they are termed palpitations or hiccup. These partial convulsions appear alone, or conjoined with the general convulsion. As being of little importance, we are disposed to waive the consideration of these partial actions.

It has already been stated, that the convulsions of pregnancy and labour occur most commonly without any marked symptom preceding the attack; yet the convulsive attack is occasionally preceded by appearances which would seem to mark their approach. Their precursory marks, and the state of the patient during the convulsive paroxysm, are vividly and faithfully described by our author. The delineation we shall quote as a specimen of his style and manner.

> "Quelquefois elles sont précédées par les convulsions partielles déja décrites. D'autres fois, elles attaquent la malade sans symptomes précurseures, sans perturbation locale, sans aucun prélude enfin qui puisse faire redouter leur apparition. Dans les cas les plus ordinaires, des douleurs sourdes, une anxiété considerable, des tintemens d'oreille, des éblouissemens, des vertiges, un frisson général, un assoupissement profond, des tressaillemens dans les membres, des fourmillemens, un sentiment d'oppression, un difficulté sensible de respirer, précèdent l'invasion de l'accès. Bientôt la cephalalgie augmente, les yeux deviennent hagards, la cécité, la surdité se declarent, la connaissance se perd, les fonctions cérébrales s'anéantissent, les membres sont agités de mouvemens convulsifs; alors la respiration devient bruyante, la bouche et les narines se remplissent d'écume, les yeux roulent dans leur orbites, l'agitation des muscles est portée à l'extrême, le reserrement tetanique de la machoire, le grincement des dents, le bruit et la gène de la respiration, les battemens violens des artères carotides, l'engorgemens des vêines jugulaires, l'ejection involontaire des matières fécales et des urines, la distortion du tronc, la tumefaction de la face, l'issue au-dehors, et le gouflement de le langue, présentent un spectacle vraiment effrayant. Cet état persiste pendant un temps indeterminé, et laisse après lui la femme dans une assoupissement profond. La respiration plus tranquille ne revient pas cependant à l'etat naturel; la mémoire et les autres facultés de l'entendement demeurent suspendues; la perte de la veu et de l'ouïe persistent encore. Un nouvel accès se déclare, les mémes phénomènes se presentent, et les convulsions, ainsi renouvelées un grand nombre des fois, laissent la femme sans connaissance et presque sans vie, plusieurs heures, et meme plusieurs jours, de suite."—Page 53.

The convulsive attack here described is the one attended with fulness and high vascular action; it is a species of convulsion highly dangerous, and from which, if the patients recover, they do so with a fatuitous countenance, and an enfeebled mental energy more or less considerable: if the head is examined after death, extravasation of blood or effusion of serum is found to have taken place within the cranium.

But this state of the vascular system is far from being constant. M. Miguel therefore goes on to describe another state of the convulsive attack, where activity of these organs is not superadded, and this may be considered a description of the affection in its more simple and unmodified state.

> "Quoique la cause la plus fréquente des convulsions générales soit la plethore, quoique la nature de tous les symptomes indique un engorgement des vaisseaux du cerveau, comme dans l'apoplexie, néanmoins on ne remarque quelquefois presque aucun des symptomes exterieurs qui annoncent cet afflux vers la tête: alors les signes de la pléthore et de la congestion sanguine n'existent pas; il est nécessaire de recourir à une autre cause. La cerveau est toujours affecté, mais la cause de cette affection est hors de tous nos moyens d'investigation. On accuse alors les nerfs de cet état pathologique: et en effet, c'est la temperament nerveux, soit natif, soit developpé par la grossesse, qui le favorise; la douleur et l'irritation seule de quelque autre partie coïncident avec l'état d'éréthisme du cerveau, et semblent le produire par une sympathetique irradiation. Dans ce cas le visage est pâle, et n'offre pas cette tumefaction, cette lividité qu'on remarque dans les cas les plus ordinaires: les vaisseaux sanguins n'offrent point cette plénitude ou ces battemens qui sont les signes de la congestion sanguine: le pouls, au contraire, est petit, serré et concentré; les urines sont claires, commes dans les affections nerveuses; les yeux, en lieu d'être colorés par l'injection des vaisseaux qui les entourent, offrent un certain brilliant qui les rend égarés, et qui indique un état d'éréthisme de l'organe cérébral. La distinction de cet état pendant l'accès de la convulsion, d'avec celui qui a été decrit précédemment, peut servir de guide au practicien, pour choisir le mode de traitement qu'il doit employer."—Page 56, *et seq.*

When the symptoms of puerperal convulsion are carefully considered, as we have too frequently witnessed them, or as described above, we might express our surprise that they can take any name but that of epilepsy. That they are modified by the situation of the patient; by a greater fulness of the head; and by the supervention or previous existence of labour pain, must be allowed; but practitioners, who have often witnessed these attacks, must confess that they agree most perfectly with the descriptions of epilepsy, in our ancient authors.

The most frequent result of an attack of convulsion, when the female is near the full time, is the expulsion of the child. Uterine contraction is generally produced by the violent convulsive motions and concussions, and by the general disorder of the animal economy, induced by the state of the nervous system. When once the contractions have commenced, they proceed with an increasing progression to their final result,—a result extremely dangerous to the mother, and more dangerous to the child. Females, however; do frequently recover from this situation, and the prognostick we might be disposed to give, must consequently be deduced from the frequency and the intensity of the convulsion.

As the changes which pregnancy induces in the economy of the female, are attended with an increased sensibility and irritability of the cerebral system, and with an higher excitement of the vascular organs, and, as the condition goes on increasing to the full time, and is deemed by our author essential to the production of convulsions, it follows that the tendency to the developement of the morbid action must be highly increased during the latter months, and during labour. Labour consists of a series of involuntary contractions of the uterus, aided in the last stage by actions nearly similar in the abdominal muscles and diaphragm. These contractions, we are told, ought to be termed convulsions, if they were not a natural consequence of pregnancy, and necessary for the preservation of the individual. If this state of alternate contraction and relaxation is not convulsion properly so called, the repetition may develope a genuine convulsion; a natural action may propagate and extend itself in peculiar constitutions, so as to become an irregular and disordered one, as is seen in many cases of chorea.

Determination of blood to the head, the effect of labour; irritation, arising from the pain attending uterine contraction; and all those circumstances which protract the termination of labour, M. Miguel states to be high exciting causes of this disease. Of these latter causes we may be entitled to entertain doubts; convulsions rarely occur in habits exhausted by a protracted labour, unless immediately preceding dissolution, of which convulsive action we do not here speak. The convulsions which occur in labour, most commonly take place during the process of dilatation of the os uteri, and where, so far from the cases marking feebleness or protracted labour, they have appeared to be going on well, up to the period of the convulsive attack. We agree with our author, that convulsions taking place during labour are almost always general. The affection of the nervous system in which they originate, is sufficiently great to involve the whole of the voluntary muscles, too often the involuntary ones, and to induce death. The extent to which the perceptions of the patient, and the mental faculties, generally, are affected during the paroxysm, are various; in some cases, perception continues during the fit, but most commonly, after the first or second paroxysm, the patient loses sense and sensation, and in the latter case she lies comatose in the intervals.

The convulsions of pregnancy are more dangerous the nearer the patient is to the full time, because, they have a greater tendency to induce labour, in which case they rarely cease till the child is expelled. The convulsions of labour are less dangerous the nearer the labour is to its termination before they commence, because the uterus is likely to be emptied of its contents early by its own efforts, and the labour is more capable of artificial aid.

In every attack of convulsion during labour, the first part of treatment is a free and copious bleeding, and it will be necessary to repeat this according to circumstances. If the arterial system is in a state of high action, and the patient of a full habit, bleeding must be repeated again and again, and active purging put in execution: when the fulness of the head is simply congestion, and a consequence of the convulsive action, patients rarely bear to lose blood with so much freedom: it may, however, be taken away from the head and neck, by cupping or leeches, after we decline general bleeding. The hair should be cut off, and cold applied frequently to the head, or water dashed upon the face, thus endeavouring to do away with the tendency to mischief within the cranium, till nature or art can relieve the general irritation. But, notwithstanding all the treatment we can put in execution, it most frequently happens that the convulsions come on and increase in violence with every labour pain, till the child is expelled, or the scene closed by the death of the mother.

Numerous writers advise us, when convulsions occur during labour, or even before labour, to have recourse to artificial delivery. On the contrary, many consider the steps necessaryt induce artificial delivery, equally dangerous to the patient as the convulsive attack. Mauriceau states convulsions to be highly dangerous to mother and child, unless the female is early delivered; but he adds, until the os uteri is sufficiently dilated, he would have recourse to ordinary treatment. La Motte gives the same advice, and would not resort to delivery, unless he could not hope further assistance from nature. Baudelocque declines artificial delivery whilst nature appears disposed and equal to the expulsion of the child, and would never undertake it in any case, unless labour has actually commenced. Baudelocque and Gardieu state that the progress of labour is often very rapid during convulsion, and that a female will frequently be delivered by three or four pains, after the os uteri has begun to dilate. Collections of observations are full of cases, where the convulsions of pregnancy have ceased, and the patients have been safely delivered by nature, and also of patients delivered by nature in the midst of the most distressing convulsions. It is the state of the patient, the effect and violence of the convulsion, the apparent danger to the mother and child, which ought to determine our practice. If the convulsions increase, and the uterine action becomes more feeble, they can only be relieved by delivery, and the mode must depend upon the state of the os uteri and position of the child. These opinions, and the practice as here stated, are in conformity with the views of our countryman Denman and the best British accoucheurs. M. Miguel states, that occasionally rupturing the membranes induces such a calm, and relieves the uterus so much, as to suspend the convulsion. If such an improvement does take place, it will undoubtedly do away with the necessity of immediate delivery; but we would remark, that the liquor amnii generally comes away early after the attack of convulsion, the membranes being ruptured by the violent concussions which the uterus sustains, and that we have never seen this circumstance diminish the violence of the convulsive attack.

In speaking of the necessity of delivery, our author remarks, that the state of the os uteri is occasionally such, as to oppose, by its spasmodic rigidity, or by its diseased hardness, the exclusion of the child, or artificial delivery by passing the hand and turning; and he advises, if the patient is sinking under the pressure of the convulsions, that an incision be made into the os uteri, which operation has been repeatedly effected with success. Indications of this operation may be found in the Commentaries of Van Swieten; it has been practised successfully in France by Dubosc. It is recommended by Lauverjat. J. F. Bodier advises it, where protrusion of the arm opposes the introduction of the hand; and Mons. Contouly, one of its most zealous advocates, states, that the hand is sometimes unable to dilate the os uteri, and that the attempt aggravates the violence of the disease. He says, that, after incision of the orifice, there is little danger, since there is neither hemorrhage nor external wound: upon the extraction of the child, contraction of the os uteri diminishes the apparent length of the incision, and suppresses the bleeding.

Upon this subject we must beg leave to remark, that rigidity of the os uteri, independent of organic disease, will rarely present a real obstacle to natural or artificial dilatation. That the sedulous application of means, calculated to lessen the convulsive action generally, and the tendency to injury within the cranium particularly, which last appears to be the common cause of death, will generally procure so much time, as to enable us to give effectual assistance. We have lately seen convulsions continue twenty-four hours, with a high and unyielding os uteri, the liquor amnii having come away. To turn the child was out of the question, but the head was ultimately extracted with the lever, the os uteri having dilated rapidly when it commenced giving way; the patient recovered. When the os uteri continues high, projecting and hard, during the existence of convulsions, it marks that the cervix uteri is not developed; this portion of the organ must be obliterated before force can be applied to dilate the orifice. An unyielding os uteri during labour, when the cervix is completely developed, is more frequently the effect of inflammation of the part, than of spasmodic action, and yields the best to mild management; this is the opinion of Dr Denman, and is undoubtedly correct. All those means which have a tendency to ameliorate the convulsion, and to relieve the brain, have an effect in increasing the disposition to dilatation of the os uteri. Few cases of convulsions during labour die undelivered, or with an impossibility to deliver in the hands of practitioners of energy and judgment, unless the attack is extreme and suddenly fatal from its violence. When the os uteri is hardened and undilatable from disease, whether the convulsions exist or not, it is indisputable that we ought to resort to incisions, in order to effect delivery; if the head is pushed through the orifice by the force of the labour pains, or if the child is brought through by art, a portion of the organ gives way, and it is uncertain at which point the laceration will commence, how far it will extend, or what contiguous organs it will involve. Incisions into the os uteri are too little contemplated, and too low estimated, by the English accoucheur.

In watching the progress of convulsions in the last stage of pregnancy or in labour, whilst we painfully witness our feeble powers in controlling them, we can still look forward with hope, to the probability of their ceasing upon delivery, and to the recovery of our patient, provided so much mischief has not been done within the cranium as to prove fatal in its effects. In all these cases, our examinations per vaginam should be frequent; and the moment we can render assistance with safety, by manual or instrumental aid, this ought to be done. As an undilatable state of the os uteri is the general impediment to delivery of the child, it would be of the greatest consequence if we were in possession of means, by which this portion of the organ could be relaxed and enfeebled, so as to yield easily and early to the conjoined effect of the convulsion and the labour pain. And this leads us to the consideration of the work of Mons. Chaussier.

This is a short memoir of 23 pages, having for its object to recommend the extract of Belladonna, for the purpose of relaxing and enfeebling the os uteri, and thus aiding a natural or artificial delivery, in cases of convulsions, when a want of dilatation, or a very rigid os uteri, are obstacles to the expulsion or extraction of the child.

M. Chaussier states, that, in employing curative means, our indications are, especially, to relieve congestion of the head, and to prevent its consequences; whilst to arrest the recurrence of convulsion, we are to attend to the great object of emptying the uterus of that burthen which he thinks the exciting cause and source of irritation. He states the os uteri to be frequently so rigid, and its sensibility and irritability to be so much increased, that it is impossible to dilate it by the successive introduction of the fingers and hand, without increasing the frequency and intensity of the convulsion. The same evil consequence, he thinks, will arise from incisions into the mouth of the organ, with which opinion we decidedly concur; unless, as we have before stated, there exists a diseased hardness and thickening. These considerations led him to search for some more easy means, and considering the effects of Belladonna and Hyoscyamus in dilating the pupil of the eye, he was induced to try preparations of the same plants, with the intention of facilitating dilatation of the os uteri. Ointments of these medicaments were given to Madame La Chapelle, sage-femme en chef de le Maison d'Accouchemens, and also to Madame Le Grand, who have employed them with success in different cases of rigidity of the os uteri, and also of rigidity of the external organs. The ointment he uses is composed of four parts of hog's lard, and one of extract of Belladonna, and is conveyed to the os uteri by means of a blunt female syringe, having a large opening, and directed to the part with the finger as in making a common examination. After it has been applied thirty or forty minutes, the os uteri becomes so soft and relaxed, as to oppose no resistance to the force of the labour pain, or to artificial dilatation.

We should have been very happy had this little essay been made satisfactory by the detail of cases, by which medical men would have been able to have judged for themselves. The proposition, however, comes from very high authority, and the pamphlet before us is a second edition, which speaks for the favourable manner in which it has been received in France. The means are of very easy access and application, and the suggestion highly worthy of a favourable consideration.

An Inquiry concerning that Disturbed State of the Vital Functions usually denominated Constitutional Irritation. By BENJAMIN TRAVERS, F. R. S., Senior Surgeon to St Thomas's Hospital, &c. &c. &c. (Continued from p. 183).

WE now resume our analysis of this important volume. In our last we made our readers acquainted with a very few only of the important views which Mr Travers has taken on the subject of constitutional irritation. These were to the following effect: The susceptibility, possessed by every living animal of the impression of a stimulus, whereby it is incited to the performance of its peculiar function, is denominated its *irritability;* while *irritation* is the name given to that state which is produced by an extraordinary excitement of the irritability, either of a part or of the whole of the system. Irritation may be also *local* or *constitutional*. The irritation may be either confined to the part, the constitution taking no cognisance of it, or the constitution may be compelled to notice and *sympathize* with the local irritation, frequently even in its nascent state. The effects of local inquiry on the constitution, and the mode by which these effects are brought about, thus become objects of the highest pathologic consideration. Sympathies are, in fact, associations founded on a reciprocity of sensations and action ; some being *direct*, as between organs served by branches of the same nervous trunk ; and others *circuitous*, as between organs remote, but maintaining an indirect communication through the medium of the brain. But every *sympathetic* action presupposes a *direct* one, though the latter may elude observation. The *direct* injury of an organ affects its functions secondarily, while that which is *indirect*, or *communicated through the medium of sympathy*, acts first upon the function. Irritability may again, when considered in relation to the system at large, be either *proper* or *sympathetic*. It is *possible* for either the mind or the body to be singly and directly acted upon, and the other not affected, or, if at all, secondarily ; this, were it ever exhibited, would afford an instance of *proper* irritability, and it would be sufficiently distinguished from sympathetic irritability, where the body is deranged through the medium of the mind, or, *vice versa*, the mind through that of the body. Again, in relation to separate organs, if painful news take away appetite, or pinching a tendon occasion a sensation of sickness, the irritability of the affected organ is *sympathetic*. The phenomena of constitutional irritation, of symptomatic and hectic fevers, exhibit the sympathy of the entire system, with the several forms of injury or disease.

Such is the general notion entertained by Mr Travers of irritability and irritation ; and after this recapitulation, we shall proceed to the more practical part of the disquisition. We also repeat, that we shall give an abstract of the views of the author, as nearly as possible, in his own words.

We had occasion, in our last Number, to notice Mr Travers's remark, that an extraordinary excitement of the irritability of a part or of the whole of the system, or, in other words, an extreme susceptibility, and consequent over-activity, are invariably coupled with, and most probably depend upon, weak and insufficient powers of constraint and resistance ; and hence morbid irritability and irritation imply weakness. A weak organ or constitution is one easily disturbed; because it is continually exposed to greater activity than it has power to support. Keeping this important principle in sight, Mr Travers has considered irritation as terminating in two general states; the first is that of *pure prostration*, where no reaction takes place; the second is that of *prostration with reaction*. The view of the author on these two different states we shall now give.

1. *Pure Prostration, or Prostration without Re-action.*

It is probable that a regular series of impressions and actions maintained between the nervous and muscular systems is indispensable to animal existence, and that an interruption, derangement, or suspension of these, is occasionally the result of a sudden and violent shock, which may be mental or corporeal, or partaking of the two states combined.—(P. 454). Prostration, then, is a state not actually amounting to, but threatening, or nearly approaching to, a cessation of vital action.—(P. 455).

The symptoms of pure prostration are as follows: Universal pallor and contraction of surface, shuddering, very small and rapid pulse, astoundment of the mental faculties, generally a dilated pupil, shortened respiration, dryness of the tongue and fauces, indistinctness, and at length cessation of the pulse at the wrist, stupor, oppressed and noisy respiration, coldness of the feet and hands, involuntary twitchings, relaxation of the sphincters, confirmed insensibility, stertor and death.—(P. 406). Another variety of this state is little more than a condition of continued languor and faintness, with coldness and sleepiness verging on deliquium, the pulse and breathing almost imperceptible to the nicest observation, terminated by convulsions.—(P. 407).

The cause of prostration may now be considered. It was observed, that, when local irritation terminated in one that was constitutional, it was indicated by a propagation or extension of the irritation to the great sources of nervous injury, and from them to all parts of the system; and in the frequent instances of sudden death consequent upon injuries which leave no trace of their destructive operation upon the texture of the vital organs, there is a considerable though not a strict analogy between these and certain physical injuries of the brain. Other instances of death, after the lapse of a few hours or days, and some even of weeks after the injury has been sustained, admit of no other explanation according in any degree with the history and symptoms of the malady, than a suspension or failure of the nervous power. These cases are characterised by symptoms of exhaustion, more nearly resembling such as attend upon changes of structure in organs auxiliary to the support and preservation of life.—(P. 431). The first evident impression of injuries is on the heart. Every thing denotes diminished energy of circulation. In addition to a small and very feeble pulse, we have languor, if not stupor, paleness, chilliness, &c. The nervous influence is capable of acting directly upon the heart, either as a stimulus or sedative. There is no other medium by which an impression, external or internal, can be transmitted. The vital organs are most deeply affected by impressions made over a large surface. Under the permanent depression, as under the privation of the whole nervous function, the properties of sensation and volition, of irritability, and of involuntary motion, cease in succession. The blood, however prepared, cannot excite the heart to action, nor the atmospheric air the organ of respiration, if that irritability or appetency, if it may be so expressed, which renders them respectively susceptible of and obedient to these stimuli, be exhausted or destroyed.—(P. 435). When a patient dies immediately, as, for instance, during or immediately after the conclusion of an operation, it is a case of syncope from paralysis or spasm of the heart, (p. 437.); and the voluntary muscles cease to be excitable at about the same time as this organ, (p. 424). Other injuries of the nerves destroy on the same principle, (p. 446). If the cervical spine be broken adjoining the cranial portion, or above the origin of the phrenic nerves, death is instantaneous, by reason of the palsy of the respiratory muscles, (p. 446). In short, some injuries interfere with the intellectual powers, some with sensation and voluntary motion, some with the nutritive, others with the excretory function, which is an appendage to the nutritive, (p. 449.); and all these shew the effects of physical interruption or annihilation of the nervous system upon the system at large, (p. 430.), the decay of functions corresponding with the deprivation of nervous energy, (p. 447).

2. *Prostration, with Re-action or Excitement.*

Prostration with excitement indicates a greater degree of vital power, the excitement being a partial evidence of the unexhausted irritability of the vital organs. It is the result of a less abrupt or intense degree of shock (p. 64.), the phenomena of which find an epitome in those of a fit of syncope, and the recovery from it. In the two cases the order of the train of symptoms is similar; it is the rapidity of the crisis in the syncope, and the crowding and condensation of its events into a shorter interval of time, which forms the main distinction. The heart is affected with tremor, and although it does not cease to act, acts so unavailingly, that the cerebral circulation is nearly arrested, and the current of life seems at its last ebb. As the heart and vessels of circulation recover their action, and the mental faculties begin to be restored, a momentary hallucination or delirium comes over the patient, not unfrequently accompanied with violence, to which succeeds a subdued rigor, and this is followed by a warm glow, then a gentle moisture of the surface, and a calm but somewhat oppressive languor. The causes which lead to this are not more different from each other in various cases, than from those which give origin to the state of prostration. It is upon the brain in both cases that the first impression is made, and to its influence upon the organs of circulation and respiration, that the phenomena, which differ in degree and duration, more than in kind, are to be ascribed. (P. 465 to 467.)

Prostration with excitement is sufficiently distinguished from a state of pure prostration, by a general tumultuous agitation, and a rapid transition, or confused intermixture of symptoms. A case of this kind is characterised by the signs of languor and stupor or drowsiness in its commencement, to which, after a variable interval, succeed rigor, precordial anxiety, restlessness, jactitation, a rapid and bounding pulse, oppressed respiration, with frequent attempts to sigh, flushed countenance, contracted pupil, dry heat of skin, parching thirst, rejection of liquids taken into the stomach, incoherence and wildness of expression, sometimes amounting to fierce delirium. This state is succeeded by exhaustion marked by somnolency, a profuse chilly and clammy sweat, a haggard and livid aspect, a small irregular or fluttering pulse, innumerably rapid, panting respiration, hiccup, and subsultus, the stupor and stertor of apoplexy, and death. A variety of this state occurs, which is alternated with coma, and convulsive paroxysms. The features undergo the contortions and fixedness of epilepsy; there are vehement maniacal ravings, and impotent attempts to rise from bed, with an incessant muttering and repetition of broken phrases relating to the occupation of the individual, and terminating in exhaustion. (P. 407.)

But an extreme state only has been described. Symptoms of prostration, instead of fatally increasing, may gradually give place to a partial and defective re-action, protracting life, but faintly improving the prospect of restoration, which remains doubtful for several days in succession; or, on the contrary, an efficient and healthy degree of reaction may be quickly established, consequent upon symptoms threatening the most unfavourable issue (p. 408.) This reaction may be gradual, and restorative of a tranquil and natural state of the system, as exemplified in an ordinary fainting fit, or it may be irregular and violent, that is to say, an action unsupported by sufficient power to maintain and carry it through; and in this case the state of exhaustion into which the patient lapses, quickly terminates life. Symptoms of excitement are intermingled with those of an opposite description,—an effect sometimes attributable to the over stimulation of the system. The sudden accession, the imperfect development, not less than the abrupt termination of the symptoms, broadly distinguish this ephemeral excitement from that of continued irritation, and evince that the former, like the lighting up which often precedes natural dissolution, is a genuine feature of that state of universal atony of the nervous system, subject to preternatural excitation, which has been termed prostration with excitement. This partial excitement is distinguished by its short-livedness, and the non-attainment of a permanent condition, from that in which reaction being complete, the more determined and durable character of the symptoms which supervene, implies, that it is the result of a positive and continued irritation, either in itself or in its effects. (P. 474, &c.)

Analysis of some of the more prominent Symptoms of Prostration, and of Prostration with re-action or excitement.

Nausea.—The stomach is affected with nausea and loathing of food by any sudden depression of nervous energy. It may be ascribed to such a loss of tone, or of erethism, in the sentient extremities, and consequently exhalant capillaries of the mucous surface, as we see a sick stomach and other causes produce upon those of the cutaneous surface. Suppressed or depraved sensation is one of the most immediate and remarkable effects of irritation. It is probable that a morbid sympathy, similar to that which suddenly unfits the mind for thought or the body for exertion, is the cause of that disgust in the stomach which occasions nausea. Nausea is not only an ordinary consequence, but a never-failing cause, of nervous depression. The universal sympathy is in no organ more strongly exemplified than in the stomach, as is proved by the instant nausea preceding faintness, from remote and transitory causes, (p. 468, &c.)

Vomiting.—It would appear, that a regurgitation of bile, and its overflow upon the stomach, takes place in these cases, as a consequence of the first debilitated, and afterwards deranged or inverted, muscular action of the stomach and intestines. Vomiting may also be concomitant with a constipated or lax state of the bowels. (P. 469).

Hiccup.—Hiccup, a more advanced and decided symptom of prostration, is a spasmodic affection of the diaphragm, arising probably from a contiguous sympathy with the stomach. We see it generally, but not always, connected with the irritability which gives rise to vomiting, and both symptoms, perhaps invariably, with a flatulent state of the small intestines. Intestinal obstruction operates, though in a different manner and degree, to produce these symptoms in prostration, whether directly induced by shock, or indirectly, by gangrene or typhus fever. These enfeeble almost to paralysis, the proper muscular motion of the intestines, and thus give rise to excessive flatulent distention. (P. 471).

Convulsions.—The phenomenon of convulsions is invariably coupled with the state of cerebral irritation. This irritation may have been propagated to the brain from any suffering organ, as from a wounded muscle or nerve; from worms, or sordes in the primæ viæ, suppressed catamenia, or tension of the gums in dentition; or it may arise from the pressure of bony spicula on the brain, from lesions, vascular congestion, or effusion in that organ. In either case, convulsions are symptomatic of disturbance, amounting to an interruption or temporary suspension of the cerebral influence, whatever that may be. We see these spasms arise in apparently opposite states of the system. In the plethoric and the ex-sanguine; in the robust and the debilitated; in congestion and in effusion; in acute inflammation and in destructive ulceration. Severe local irritation will occasion vascular congestion, and ultimately effusion in the brain, and hence give rise to convulsions.

Inflammation being a frequent cause of local irritation, also operates to produce convulsions. When the irritating cause is, in its nature, such as to admit of removal, the convulsions cease upon such removal. The tendency of a local irritant to produce convulsions is augmented by any sudden depression of power, as, for example, by shock, or by hemorrhage. When the system is thus exhausted, convulsions are often abrupt in their appearance, and overwhelming in their effect. This occurs most frequently in infants, and is chiefly owing to the powerless and unresisting condition of the body; for the irritation acting singly, *i. e.* unaccompanied by such depression, gives a more permanent character to the convulsions. In short, there is an active and a passive form of convulsions, and to the proper treatment of the disease, upon which they are symptomatic attendants, the understanding of this distinction is of the last importance. In one case we look for relief to cordials and tonics, in another to venesection and purgatives. When convulsions suddenly extinguish life, or, in the common phrase, a patient expires in convulsions, as in states of prostration indicated by previous signs of cerebral torpor, they most probably destroy by arresting the muscles of respiration, and perhaps the heart and the external affection is consentaneous, or even secondary. In a limited sense, life is always terminated in convulsions. (P. 142 to 145).

Rigor.—The symptom of rigor is the most uniform announcement of re-action, though by no means peculiar to this state. In the phenomena of irritation it is a sympathy of the circulating with the sensorial organ. The propelling power of the heart is so languid, that the venous trunks become loaded to congestion, while the capillary circulation seems to be at a stand-still. But although rigor has its origin in the enfeebled action of the heart, and the unequal distribution of the blood, the phenomenon would not take place if the heart were not instinctively roused to an inordinate activity, in order to overcome the gradually accumulated obstacles opposed to the circulation. The struggle between the heart and the capillaries constitutes the rigor. As the former overcomes the latter, the balance of circulation is restored, and the rigor subsides. (P. 472 to 474.)

Frisonnement.—The *frisonnement* which ordinarily accompanies shock, is distinct from rigor. It is a cerebral affection like the shudder produced by certain acutely painful impressions of the mind or organs of sense. It is not always present, and sometimes wanting, where the temperature, to which it seems to have no reference, is to our sensation reduced. On the other hand, it may be often seen without any sensible coldness of surface. (P. 459.)

Appearances on Dissection.

Upon the great importance of anatomical examinations, not only to test the accuracy of our past opinions, but for the chance of obtaining some gleam of light to direct our future steps, there is no need to insist. In cases of constitutional irritation, it is most desirable, after the inspection of the parts affected, and the thoracic and abdominal viscera, that the entire trunk of the nervous system should be attentively examined, and the general distribution of the blood in both orders of vessels carefully noted. (P. 542.) In cases of fatal burns, a patient, after the first expressions of anguish have subsided, nearly resembles a person stunned by a fall, or as much as possible stupified with liquor, without suffering an actual suspension of his senses. Inspection demonstrates fulness of the veins of the brain and its membranes, and effusion beneath the arachnoid membrane confirm the symptoms which occur in the latter stage. But these appearances are too slight, and too frequently seen in the bodies of persons who die rapidly, to be much dwelt upon. The proximate cause of death appears to be a species of concussion, functional not organic, by which the brain is deprived of its influence over the organ of circulation; for the symptoms of cerebral disorder are first manifested; secondly, a diminution of the power of the heart; thirdly, the respiratory function becomes impeded, as a necessary consequence of the two first. (P. 108.)

The distinction between Constitutional Irritation and Inflammation or Fever.

Irritation is not inflammation or fever under any modification, though teachers have concluded that because they sometimes coexist they coincide. Irritation may be a symptom of fever, as fever may be an effect of irritation, but they are originally and essentially distinct forms of disease, and either may exist in the absence of the other. (P. 493.)

The great and essential distinction between local irritation and inflammation was shewn in an early part of this analysis, (see page 180 of this volume). It was remarked, that while the phenomena of the former are chiefly displayed in the nervous system, those of the latter are manifested in the vascular system. Paroxysms of fever, distinguished by their repetition and distinctness, conform with the state of the capillary circulation and the general secreting functions. (P. 400.)

Inflammation has, again, been sometimes considered as a healthy, because a healing, action, which, though not a strictly logical, is an intelligible phraseology. (P. 139.) But if there exist that preponderant influence of the nervous system which it characterizes irritation, it appears to derange the sympathy and consent, the revolution and duration, of actions, constituting the paroxysms and types of fever, and referred to the struggles of a *vis medicatrix.* This fact is exemplified in the state denominated febrile irritation, which is symptomatic of minor injuries, and in the irregular train of symptoms which accompany disorganizing inflammation. (P. 401.)

Lastly, while the general character of inflammation is power, that of irritation is weakness (p. 542.); its symptoms being allied to a powerless state of the constitution. (P. 500.) The former is illustrated in the phenomena of sympathetic fever, which is a healthy reaction of the constitution, without any impairment of its powers, these being shewn in the encreased energy of the vascular system. If the natural powers of the constitution be deficient, the fever assumes the low or typhoid character; and in its progress gives out indications of the disturbance and distress of the nervous system, from its inability to support the increased action of the vascular. (P. 494.)

It thus appears, that irritation and inflammation are the respective phenomena of two different systems, although they occur in nature so combined as not to admit of separation. (P. 543.) Hence the objection which lies against the term "irritative fever," as synonymous with irritation. (P. 40 and 543.)*

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* Mr Travers remarks a difference between the rigor of fever and irritation which is worth notice. "In fever and inflammatory diseases the dura-

Causes of Constitutional Irritation.

The causes of constitutional irritation must necessarily be very numerous. They may be stated as follows.

1*st*, *Inflammation and Fever, Causes of Constitutional Irritation.*—The alliance between the vascular and nervous system is such, that neither can be affected in any serious degree exclusively. If the nervous element be essential to muscular action, the presence of blood fitted to supply that element is essential to the nervous. (P. 429.) An unsubdued inflammation becomes a cause of incessant irritation (p. 504); and the change which parts undergo, in passing from a state of health to a state of sphacelus, is not greater, nor more remarkable, than that of the nervous system, from a healthy condition, to that of extreme prostration. (P. 498.) It may be also remarked, that inflammation is strong and effective, or the contrary, in proportion as it is free from the irritation which it induces, or mixed with it. Sympathetic fever may be of the pure inflammatory character, bold and powerful; or it may be of a vacillating and weakly character. It may be sympathetic synochus, or sympathetic typhus. The latter, though it differs in character from the former, is still a mode of sympathetic fever; and hence it is treated, primarily at least, by medicines addressed particularly to the secreting organs. The irritation set up by inflammation has generally more or less of febrile action blended with it. (P. 493.)

2*d*, *Local Irritation.*—It was before remarked (p. 180 of this volume), that, when irritation was local, it was demonstrated, *first*, by an alteration in the habitual and proper sensation or action of a part; and, *secondly*, by pain, unattended by any other sign of inflammation. Where local irritation exists in a high degree, it becomes transferred to the constitution, either immediately, that is, independently of inflammation,—even before time enough has elapsed for its production,—or after a short, but variable, interval, as a consequence of inflammation. As illustrations of this effect, may be adduced the severest cases of disorganization, chemical and mechanical, as deep and extensive burns, crushed joints, compound dislocations, fractures attended with comminution of bone and dilaceration of muscles and bloodvessels. (P. 40 to 44.)

Local irritation may, again, *by previously inducing local in-*

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tion and intensity of the rigor augurs a probable correspondence in the ensuing stage; but in irritation a hot stage is either very transient or imperfectly formed, or altogether passed over, flushes and partial sweats succeeding to the rigor." (P. 474.)

flammation, become a cause of constitutional irritation. When local irritation is acute and permanent, inflammation ensues, which is proportioned in degree to the severity of the irritation and the habit of the patient. Of this, contusion, sprain, wound, and the operation of extraneous substances in the production of abscess and ulcer, under an infinite variety of circumstances, are examples. (P. 42.) But when the act of inflammation is thus provoked, the original irritation loses its independent character, and assumes a symptomatic form. (P. 44.) Nervous affections are indeed secondary, and strictly symptomatic of the fever, whatever be its origin, and, therefore, undistinguishable from those which attend upon low fever in the absence of injury. (P. 491.) The symptom may also become fixed and inveterate, and act upon the constitution. (P. 44.) In general, we have the sympathetic fever formed with a more or less exact correspondence to the occasion, according to the powers of the constitution; but, in certain forms of injury, certain constitutions, and modes of treatment, the inflammation is an irritant, and gives rise to a disordered action of the entire nervous system, which takes the precedence or the place of fever. Such a state of the system reacts upon the part, and either checks or destroys the restoring process; while a state of exhaustion abruptly closes the scene on the 5th, 10th, or 15th day.

3dly, Burns, contusions, lacerations, &c. and operations for recent injuries, and chronick diseases.—These injuries may, independently of inflammation, give rise to constitutional irritation; or they may previously induce inflammation, of which the constitutional irritation is a consequent. These two circumstances ought to be separately considered.

(a.) *Burns, independently of inflammation, may give rise to constitutional irritation.*—Severe burns exemplify the symptoms of direct irritation in their most aggravated forms. (P. 103.) But can we explain their origin? Is it on account of the texture, the seat of one of the most important functions of the animal body, and the sudden arrest of this function? The principal seat of tangible impressions is the surface of the body, and the involuntary sympathies connected with it by the medium of the brain, necessary to the due execution of the vital functions, regulating circulation, respiration, temperature, and secretion, are so numerous, that the simple arrest of these sympathies would be sufficient to throw the system into a state of universal tumult. But perhaps the instant conversion of natural into morbid sensations or irritants, may best explain the fatal shock which such accidents communicate to the brain, the organ to which all sensible impressions are first transmitted, whether healthy or morbid, and from which they are reflected upon the subservient organs of the system. (P. 104.)

In fatal cases of scalds and burns, the state of prostration is consentaneous with the infliction of the injury; the period of survival varying from eight to fifty-eight hours, when inflammation has no share in the results. (P. 404.) In these casualties, the three first days include a period of imminent danger. When this period is passed, reaction may be considered as established; and, generally speaking, the injury has nothing more in its character peculiar. Infants are sometimes suddenly attacked, and carried off by convulsions as late as the fifth day, after reaction is fully established; but this is rare. If, on the contrary, the patient be very aged, or from any cause infirm, he may fall a victim to the process of sphacelus a week or ten days subsequent to the injury. (P. 100.)

(b.) *Fractures, contusions, &c. may, independently of inflammation, give rise to constitutional irritation.*—In irritations from injuries of a severe description, the nervous system is first affected, so as apparently to prevent the formation of fever, and to present a series of symptoms *sui generis.* (P. 401.) In a case of Sir Astley Cooper, where the injury was a crush of the knee-joint, the patient was pale, cold, and pulseless, but without loss of consciousness, and within a few hours after his admission he died *comatose.* In cases of ruptured intestine and urinary bladder, the mortal symptoms of the injury sustained have from the commencement manifested themselves by similar characters. (P. 121.)

(c.) *Operations for recent injuries may, independently of inflammation, give rise to constitutional irritation.*—A fatal result, independent of inflammation, may take place after operations for recent injuries; and, as far as regards the accession of the symptoms of prostration, it is the same as in cases of fracture, contusions, &c.; four days appearing to be the extreme period to which life is prolonged. (P. 121. to 134. and 404.)

(d.) *Operations for chronic diseases may, independently of inflammation, give rise to constitutional irritation.*—In operating for lithotomy, particularly in young subjects, a fatal crisis often ensues, too rapid for inflammation to have any share in the result. (P. 404.) In January 1808, a young and delicate child was cut for the stone at Guy's Hospital. The operation was favourable; but symptoms of irritation, and ultimately a state of stupor, succeeded, and the child died on the morning of the third day in strong convulsions. (P. 139.)

(e.) *Burns, fractures, lacerations, &c., also operations for recent injuries, and chronic diseases, may induce inflammation, of which the constitutional irritation is a consequent.*—In all fevers, the nervous system is more or less involved, though for the most part secondarily, or as a consequence, if we except from this remark phrenitis. (P. 401.) In the cases recited under the last general head, constittutional irritation supervened to injuries and operations, without the agency of inflammation or fever. But the phenomena may be exemplified of direct irritation from similar causes, where inflammation has intervened. These illustrations are best afforded in cases of extraordinary constitutional irritation, which are consequent upon slight wounds, particularly when acute inflammation takes place in the tela cellulosa. An old leg ulcer—a slight recent injury, as an abraded instep, ankle, or shin—a diseased toe-nail, an inflamed corn or ganglion, irritated to acute diffused inflammation of the cellular membrane of the limb—has given origin to a constitutional state, over which medicine has little controul. But in these cases, it is not the process of mortification which destroys: it is the irritation of the nervous system by the inflammation, and the acutely agonizing pain which accompanies it. When the powers of life are well nigh exhausted, the part, the texture of which has been broken up by the disease, presents the phenomena of gangrene; but this is an effect, not a cause, of the constitutional malady. The general impression which the appearance of gangrene on the eve of dissolution has given, is erroneous. The part is disorganized, and no longer retains the principle of resistance to decomposition; but the mischief is done before the discoloration and bloody vesicles appear: nay, it as often happens before the part has so lost its organization as to part with its vitality. How many instances do we see, in which, with very moderate constitutional disturbance, gangrene passes on to sphacelus, and limbs are separated, to use Mr Hunter's phrase, " by the natural surgeon." But the power required for the process of separation, depends upon a less perturbed state of the system, a state comparatively tranquil, and opposed, in all respects, to that of direct irritation. (P. 156. to 159.)

In the erythema tending directly to gangrene, which has been occasionally known to supervene on injuries and operations, similar effects are observed. It appears to be a sympathetic inflammation of the reticular texture of the skin, exciting the nervous system to such a pitch as at once to prostrate the vital powers. In the case of a young lady apparently in high health, an acute diffused erythema followed the application of leeches to the mamma, which put on a gangrenous character, and, from the irritation which it induced, proved fatal on the eighth day. (P. 179.)

Nothing more need be said regarding the symptoms which follow injuries and operations, when the inflammation stands in the relation of exciting cause, than that they set in at a variable but considerably later period than in those cases where constitutional irritation is induced, independent of inflammation. (P. 404.)

4th, Concussion.—The effect of physical concussion is a suspension more or less complete of the faculties of sense and volition. Suspension of these faculties arises also from compression of the brain, which has been known to endure for a twelvemonth, and the person has recovered; whereas in concussion, its termination is fatal, if it continues only for a few days. Neither compression nor lesion is necessary to the fatality of concussion; but it rarely happens that pure concussion induces a complete and continued suspension of the senses and voluntary motions. It is generally complicated in this case with extravasation or lesion of the brain, or its membranes, or both * (P. 437. &c.)

5th, Poisons.—Some poisons evidently act upon the nervous system exclusively; that is, the phenomena to which they give origin indicate the extraordinary derangement or suspension of the nervous influence alone, and in this way prove destructive. Others, in addition to a powerful action on the nervous system, whether of excitement or depression, produce intense inflammation of the parts with which they are placed in contact, or chemically disorganize those parts. Those of the first class have no tendency to inflame; those of the second sometimes destroy before inflammation is set up, and are therefore independent of it; but more frequently they destroy through the medium of inflammation, or irreparable lesion. The one is a simple and direct, the other an indirect and mixed, action on the nervous system †. (P. 395.)

6th, Hemorrhage.—The effect of hemorrhage upon the nervous system is twofold; immediate, and remote. The *immediate* is syncope, and is in proportion to the suddenness, rather than the quantity of the hemorrhage; hence the relative effect of the same loss in quantity is greater and more frequently fatal from the large trunks and near the heart, than from the small vessels and at a distance from it. The *remote* effect is to precipitate and contract the actions of the heart, and is in proportion to the quantity lost, as in frequently recurring hemorrhages, or a slow protracted hemorrhage; and this effect, as well as the former, depends upon such an atony from deficient excitement of the nervous system, as incapacitates it for maintaining the actions of the vascular. (P. 505.)

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* Mr Travers has offered some very judicious remarks on the obscure subject of Physical Concussion, which we have not space to notice. He candidly admits, that " we are in truth not acquainted with the essential nature of the injury which we term concussion."

† The phenomena of Constitutional Irritation are certainly better illustrated by the effect of poisons than by that of any other agents. Of illustrations from vegetable or mineral poisons, Mr Travers has given no examples. But his work contains the completest collection of cases that has yet been published, of the irritation induced by the animal poison that has been absorbed into the system from dissecting-room cuts, and punctures made by the needle in sewing up bodies after examination. To do justice to this subject, would require as long an article in our review department as we have afforded to the pathological principles inculcated by Mr Travers. This must be our excuse for at present passing them by.

The state of prostration induced by hemorrhage, is either pure or mixed. The state of sinking (or pure prostration), according to Dr Hall, involves a greatly impaired state of the functions of all the vital organs, and especially of the brain, from defective stimulus. It may, indeed, in certain points of view, be compared with the state of the functions in apoplexy. There may also be excessive reaction, and this may subside, if the depressing cause be subdued or withdrawn; or it may become chronic, and pass on to the state of exhaustion, if the depressing cause be still in activity; or it may suddenly shift into that of sinking or pure prostration, if a pleurisy, or a shattered limb, or any powerful irritant, exist in conjunction with such a state of the system, however induced. (P. 506.)

It has not been uncommon for the state of prostration to be produced by the intemperate use of the lancet; the judgment of the practitioner having been misled by the temporary relief obtained even to the last, by the detraction of blood in acute diseases. Some persons cannot bear the loss of blood: it gives rise to prostration, attended with convulsions, in which the circulation fails so alarmingly as to require watching for several hours, and the repeated administration of stimulants to restore it. (P. 501.) A hemorrhage which does not prove directly fatal, as from a wounded artery, sometimes leaves the patient in a state of exhaustion so great that he is incapable of sustaining the shock of an operation.—(P. 182.) The loss of blood, by injury, when insufficient to destroy life by syncope, induces that state of the arterial system which prevails in gangrene; in other words, it converts healthy inflammatory, or sympathetic fever, into the asthenic excitement which accompanies prostration; and the inflammation of healing (granulation), into that of destruction (sloughing). Debility is the basis of morbid irritation; and those causes of debility which operate with the greatest force and directness, most invariably aggravate the state of irritation. These may be called examples of death by irritation, because, however the cause by which direct debility is induced may differ from that which operates in a shock, where little or no blood escapes, the symptoms bear a close resemblance, and are equally to be referred to a great and sudden reduction of power with a local irritant. (P. 186.) Under inflammation, however, the system, as Dr Hall justly observes, bears the loss of blood with less risk of exhaustion than in health; but, under irritation, exhaustion is sooner induced than in health. (P. 504.)

7th, Colliquative Suppuration.—A rapid and profuse suppuration so sinks the vital powers as to induce the state of direct constitutional irritation in an extreme degree. In many cases, this result is due to the excess of the secretion alone; in others, to the excess, coupled with the situation of the secreted fluid. In the former case, the symptoms are those of prostration, without excitement; in the latter they are mixed, or the excitement is even preponderant. (P. 188.)

8th, Influence of the Mind.—Pain has its seat in the brain, being only a mode of sensation. It is subject to varieties both in kind and degree; by the texture injured, by the nature of the injury or exciting cause, and by the state of the circulation. (P. 78.) Very opposite effects are produced by pain; as, for example, in one case stupor, and in another delirium. The influence of pain on the stomach to excite nausea and vomiting; and on the kidneys, to suspend the secretion of urine, is well known. (P. 75.) The first effect of intense and unremitting pain is precipitation of the action of the vascular system, with corresponding sensorial excitement; but neither of these signs are of long duration The pulse, which has at first a strong bound or jerk, soon becomes small, tremulous, and irregular or fluttering; the countenance, the features of which, in the first instance, are braced and compressed by a strong convulsive expression, quickly becómes relaxed, hollow, and ghastly. The extreme preternatural mobility of the muscular system, indicative of great restlessness, disappears, and a state of stupefaction and indifference to surrounding objects announces the state of exhaustion. If pain be the result of inflammation, its gradual increase prolongs the stage of excitement. If, on the other hand, its accession in an extreme degree is instantaneous, as from breach of texture or the operation of any destructive agent upon the system, the stage of excitement is comparatively short lived. And, when the description and extent of mischief inflicted are such and so aggravated as to produce sensorial paralysis, evinced by partial stupefaction without absolute loss of consciousness, it so far neutralizes or renders void the effect of painful impressions, as to admit of a direct prostration of the system without reaction. A large loss of blood at the moment of injury tends invariably to this result; that is, it cuts off the stage of excitement. (P. 77.)

We thus find that pain, when amounting to a certain degree of intensity and duration, exhausts the principle of life; so that either its continuance without intermission, or the superaddition of the slightest shock subsequent to its endurance for a certain period, is fatal. (P. 76.) Difficult and protracted parturition is now and then fatal from this cause; and even in cases in which neither extraordinary difficulty nor prostration were experienced, a fatal prostration has sometimes supervened, that has admitted of no other explanation (P. 65.) Certain forms of mortal injury are productive of sudden excruciating and unremitting pain; such as ruptures of the stomach, gall and urinary bladders. Death ensues in these cases many hours sooner than when the pain is less intense, and before the morbid changes which take place in consequence of the injury are so far established as to make it credible that the result is to be ascribed to their influence. (P. 71.) Oxalic acid, arsenick, and someother poisons taken in to the stomach, seem to destroy life by their action on the nervous system. The characteristic expression of this action is overwhelming pain, and no organic change presenting itself competent to explain the phenomenon of almost immediate death, it is highly probable that pain has the principal share in determining the result. (P. 72.) In operations protracted by unforeseen difficulties, as in cases of lithotomy, in which the stone is of such magnitude as to require crushing, the patient has begun to die upon the table. Pain, however, though of the most harassing kind, when relieved by intervals of ease, as in tic doloureux, can be endured for a long time; but this gradually undermines and wears out the preserving principle. (P. 77.) The unfavourable influence of an irritable frame of mind in the severer injuries, is universally admitted. The fear of death operates with real and serious force against the best efforts of human skill, and this is excited in a degree by no means corresponding to the occasion. The consent of an elderly, and somewhat corpulent lady, to submit to an operation which she dreaded, was by urgent and repeated solicitation obtained. Unvaried prostration of strength and spirits ensued, with a quick and very indistinct pulse, restlessness, and an extreme irritability of the stomach, which rejected both aliment and medicine. Low delirium and stupor supervened some hours prior to her dissolution. The lips of the wound were found slightly adhering, but on separating them, its cavity appeared filled with sanies. Permission for inspection of the body was refused, but no symptom indicating visceral disease was present. (P. 80.)

A sudden delirium has been observed at the conclusion of an operation for recent injury, which has evidently arisen from exhaustion of the nervous system, by the effort to support it, (p. 24.); and where the system, having been much depressed and enervated by continued suffering, or apprehension of it, is screwed up for the endurance of painful operations, this extraordinary excitement of the mind sometimes proves suddenly fatal. Thus a man, who was the subject of strangulated hernia, expired suddenly on the table during the steps preliminary to the operation, when, from the state of the symptoms and of the bowels, as ascertained by examination after death, the fairest prospect of relief was afforded. (P. 23.)

In children, the fear of internal suffering has contributed to give a fatal issue to an operation. A child, three years old, was the subject of lithotomy at St Thomas's Hospital, in the summer of 1825. The operation was admirably performed, and did not exceed one minute by the watch. A slight shivering came over the patient on being replaced in bed, and the natural temperature of the surface was not restored. He was inclined to doze and a little convulsed, and at two o'clock the following morning died. Although this child suffered considerably from the disease, he was otherwise healthy, and his death, which excited much surprise, was attributed to fright. (P. 135.)

Instances are not wanting of the fatal influence of the exciting, as well as of the depressing passions on the nervous system, as joy, terror, anger, &c.; fortunately they are of rare occurrence. (P. 80.) A predisposition of the nervous system to maniacal excitement is often serious in the extreme. In a patient who had formerly been maniacal, returning symptoms of his affection supervened, upon an operation for a stone in the bladder, which continued for forty-five hours, until death took place. The man's apprehension about the operation, the operation itself, and his joy at its conclusion, acted upon an organ predisposed to disease, and were the exciting causes of the fatal paroxysm. (P. 83–85.)

The Influence of Contingent Circumstances in the Production of Constitutional Irritation by Local Injury.

These are, 1*st*, The texture, or organ, which is injured; 2*dly*, The description of the injury which is inflicted; 3*dly*, The magnitude of the injury; and, 4*thly*, The subject of the injury.

1*st*, *The Texture or Organ which is injured.*—With few exceptions, injuries of parts of minor sensibility and low organization, induce the highest and most alarming degree of constitutional irritation. The power of reparation in parts being according to their endowment, the system is unusually excited to set up and sustain the restorative effect in injuries and morbid affections suddenly induced of the more dense and inert textures. While the constitutional excitement characterising the injuries of mucous and serous membranes assumes the more intelligible and bold form of inflammatory fever, capable of being combated by a vigorous reduction of the animal powers, that of tendinous and ligamentous structures presents the complicated phenomena of nervous derangement, commingling with, and mysteriously modifying, if not annihilating, the sympathetic fever; this effect being partly referable to the compactness and low vital power of the texture, and, in part, to its arrangement in sacks and sheaths, circumstances which strongly dispose to continuous inflammation, and the confinement of morbid secretions. Injuries of the integuments of the head, chest, and abdomen, excite, *cæteris paribus*, severer symptoms of irritation than those of other parts of the common covering of the body or limbs. Lesions of muscular fibre are severely felt, on account of its properties as well as texture. The irritation is greatly aggravated, if, from the nature of the injury, any detached or extraneous body acts as an irritant. The injuries of the lamellar texture of bone individually considered, are not attended with any peculiar or considerable constitutional irritation; but the medullary membrane and periosteum, in their adhesive and suppurative inflammation, excite a high degree of constitutional irritation. The injuries of arteries are little felt by the constitution. Veins approach nearer to the character of fibrous membranes, and these being more susceptible of continuous inflammation, are productive of high irritation. The same may be said of the lymphatic absorbent system. The absorbent glands often serve a salutary purpose in arresting, or at least impeding, the progress of continuous inflammation. Nerves, being the subject of injury, occasion serious and alarming symptoms of irritation. (P. 50 to 56.)

2. *Description of the Injury which is inflicted.*—That narrow and straight wounds are generally followed by more constitutional disorder than broad and bold ones, is well known to surgeons. The danger may depend upon the following circumstances:—1*st*, Penetration of some fibrous membrane; 2*dly*, The propensity of fibrous and ligamentous membranes to continuous inflammation; 3*dly*, The form of wound being unfavourable to the discharge of fluids secreted under inflammation; and, 4*thly*, The occasional puncture of a nervous filament, the division of which would be unimportant. In contused and lacerated wounds, which seldom admit of adhesive inflammation, it is owing to the widely dissevering and destructive nature of the inflammation which must ensue, and not unfrequently to their interruption and exasperation by ill-adapted treatment, that the system sympathizes so deeply in this form of wound. In gunshot wounds there is the additional irritation excited by foreign substances. Comminuted fractures are accompanied by laceration, contusion, or irritation of muscles by spicula, and are, for this reason, especially dangerous. (P. 56 to 60.)

3. *Magnitude of an Injury.*—The magnitude of the injury

must be understood to comprehend not only the extent in space but in destructiveness. It is felt in two ways, in its immediate and in its secondary effects. Either the system breaks down at once, and the vital functions are stagnated by the appalling shock which they have received; or having withstood this, the constitution, with diminished powers, engages in the unequal conflict; erysipelatous, or gangrenous inflammation, is set up, and it sinks exhausted under the wasting processes which must clear the way for reparation. (P. 60 to 62.)

4. *The Subject of the Injury.*—Some constitutions are regardless of injuries which excite a smart re-action in others; and very serious degrees of injury and inflammation scarcely disturb the habitual tranquillity of the animal and vital functions in one case, while they subvert and annihilate them in another. (P. 62.) In an irritable temperament, pain which is marked by extraordinary vivacity of the nervous and vascular systems, also pain from an injury, occasions a disproportionate derangement of the general health, and more frequently induces symptomatic fever. The application of leeches to an inflamed organ is in some cases as strikingly disadvantageous, as in the majority of instances it is useful. Hence also the very various effects in different individuals, of warm and cold applications to inflamed organs, as for example, to the swollen testis. From the same cause the effects of vesicatories and escharotics, and numerous surgical operations, are in no small a degree capricious. (P. 15–19.) When the irritability of the system is morbid, simple causes of irritation become extraordinary, and the local process, whether seemingly spontaneous or a casualty, takes upon itself the impress of the constitution; becomes peculiarly active or indolent, is marked by periods of excitement, or distinct intermissions of action. (P. 47.) In severe burns and scalds, many cases could be adduced, in which, by favour of youth and constitutional power, and assiduous attention, critical dangers were surmounted, (p. 101); and, again, the susceptibility to that fatal constitutional irritation, which sometimes results from slight injuries, is greater in the aged, the dram-drinker, and the man of broken constitution. Every experienced surgeon knows, that the prevalence in this climate of a scrofulous diathesis gives a seriousness to slight accidents. The symptoms of direct constitutional irritation are masked, or if they appear, are so comparatively lenient as scarcely to disturb the health; and the onus of the mischief falls, as by accumulation, upon the more advanced stages of its progress. (P. 62.) The hazard of operating upon persons in a state of rude health is well known, and the important advantage to be derived from what may be termed preparatory disease, as preliminary to operations. (P. 26.) In children, on whom the operation of lithotomy is performed, their youth, the

debility induced by previous suffering, the influence of terror or of pain, the loss of blood, and in some the privation of an habitual stimulus, when really needed, are too often accessary to untoward results. (P. 140.) Certain natural states act unfavourably on the female system, under the additional pressure of injury or operation. This is eminently the case in the states of pregnancy and lactation. (P. 31.) In short, the influence of age, sex, and condition, by which the habits are determined of climate, regimen, and other adventitious circumstances, modifying the physical and moral constitution of the patient, is so manifest as scarcely to need further illustration. (P. 62.)

Principles of Treatment in Constitutional Irritation.

The general principles to be kept in view in the treatment of constitutional irritation, may be considered, first, in reference to pure prostration; and, secondly, to prostration with excitement and reaction.

In Pure Prostration.—Prostration without re-action is a state not actually amounting to, but threatening or nearly approaching, a cessation of vital action. (P. 455.) The principles of treatment are the same as in syncope, and the means not essentially different; but the probable results admit of no parallel or comparison. This is to be explained by the difference of circumstances which has operated to produce the two states, and not the difference in kind of the effects to be produced; for, as it has been stated, the shock sometimes assumes the form of syncope, and when it does so, generally proves fatal; whereas, from a slight cause, a fainting fit is not attended with danger. (P. 467.)

What are the means, then, by which it is to be hoped the flagging power, and the natural harmonies of the system, can be restored? The state of the circulation inferred from the pulse, complexion, breathing, and temperature, is the chief, if not the only guide. If the shock be unattended by hemorrhage, and, as the argument supposes, by lesion of any vital organ, immediate or accessary cordial drinks, as spiritous and vinous liquors and compounds, and what are called diffusible stimuli, as ammonia, ether, camphor, &c., with the aromatic distilled waters, and warm and gently stimulating enemas, are the most obvious internal remedies. Externally, the stimulus of artificial heat applied to the pit of the stomach and extremities, as by fomentations, and camphorated and spiritous embrocations, or gentle frictions, when the state of parts permits, are the usual means resorted to of exciting the sentient extremities of nerves, and inviting the capillary circulation. If any advantage be gained by these means, it becomes necessary to substitute some light aliment for the dram, as gruel, yolk of egg, arrow-root, or sago, or to join them, as in jelly, or either of the above substances, with wine or brandy.

We have two points especially to bear in mind, *first*, Maintaining action; *secondly*, Not forcing action.

The first requires the incessant observation of the surgeon. Purgative medicines ought not to be given until the circulation is restored and pretty steady; then a spoonful of castor oil may suffice. It is idly premature to talk about the secretions. Medicines directed to this object cannot act beneficially in such a state of the nervous system, if, as may be much doubted, they act at all. On the second point, *not forcing action*, it may be observed, that the respondence of the circulating forces to an increased supply of stimulus, must serve as a caution against over supply. Since power is deficient, we must carefully husband our only resource, and not waste it in inordinate action. When the signs of reaction are manifested, its excess is much to be apprehended, if such reaction has been obtained by over stimulation. Excessive reaction, so induced, is prostration with excitement in its most perilous form. When such a state is the original form of the malady, it is probably less dangerous, because in this case the inequality between power and action is less. (P. 456 to 58.)

Treatment of Prostration with Reaction.—The treatment of deficient reaction, and of that which is excessive, resulting from injury or operation, prior to the commencement of inflammation, should adapt itself to the symptoms present in the two states, with this general qualification, that both are evidences of deficient power, and that existing circumstances are often sufficient to create the diversity in the order of symptoms. Thus, hemorrhage determines the one or the other, according to its extent. We find the one passing into the other state; and we discover, when in the absence of hemorrhage the former prevails, that the person has been habitually addicted to abuses of constitution; and where the latter, that some strong point of aggravation of the injury, or some extraordinary mental impression, explains its predominance. This, it cannot be denied, has often a marked influence—a maniacal tendency for example, or even a high degree of irritability. (P. 489.) Excessive reaction may subside, if the depressing cause be subdued or withdrawn; or it may become chronic, and pass into the state of exhaustion, if the depressing cause be still in activity; or it may suddenly shift into that of sinking or pure prostration, if a pleurisy or a shattered limb, or any powerful irritant, exist in conjunction with such a state of the system, however induced. (P. 504.) This uncertainty of termination is remarkable, and serves to shew how much the event is to be ascribed to the continued operation of the irritant, and to the continued sense of injury, if it may be so expressed, which the constitution feels in one case, and not, or more, than in another. In the case of patients who have been brought into the hospital pulseless, and apparently moribund, without any external injury, having suffered falls or blows so serious as to have induced the state of prostration to this alarming extent, they have in the succeeding day been restored to the tone and tranquillity, comparatively speaking, of health. It is probable, that, in these cases, prostration was induced by the complication of the injury with external hemorrhage. The reaction, however, has been spontaneous, or nearly so, although gradual enough to occupy a period of many hours. But if the same persons had suffered topical injuries of a severe description, it is more than probable that reaction would have failed altogether; or if, by favour of circumstances, reaction had been established, it is equally probable that it would have taken the form of excitement. In other cases, days have elapsed before a perfect reaction and complete relief have been obtained, marking the most intense degree of shock in the abstract, and shewing that complicated causes have operated to render it destructive. In a large proportion of the graver accidents, the constitution recovers slowly from the impression made at the moment of the injury; the reaction is either deficient or in excess; and this is additionally demonstrated by the unfavourable changes which take place in the condition of the part. In short, it is the degree of implications in injuries which determines their fatality, or allows them to proceed steadily forward to convalescence. (P. 408 to 411.)

It is a question worthy of our most serious and undivided attention, Whether we are in possession of any means of moderating excessive, that is exhaustive reaction, where the energies of the system are diminished in proportion as the actions are increased, and of tranquillizing the nervous system, at a time when the greatest disparity exists between power and action. The heart is rather thrilling than fairly pulsating; its semicontractions are innumerably rapid; the expression is by turns excited and oppressed, wild and comatose; the breathing short, and wanting the relief of sighs. A continued exertion of reason cannot be maintained, and, after a correct reply or remark, the patient wanders into irrationality. The confusion arising from the rapid alternation of symptoms usually denoting contrary states of the system, and the urgent conviction that death must speedily ensue, if this tempest be not assuaged, perplex the judgment of the practitioner. In such a crisis, experimental measures, supported by any fair hypothesis, should be encouraged, rather than met by special objections. If reaction become excessive, and the case assume the character of high excitement, the shaved scalp should be frequently bathed with a cold spirit lotion, a large blister should be applied to the nape of the neck, and the bowels should be cleared with pills of calomel and jalap or scammony, or, if medicine be rejected from the stomach, by stimulant and purgative injections. The propriety of following up this practice, should it be productive of temporary benefit, is a question of the last importance, for such a state is extremely precarious, and often shifts suddenly into that of sinking. For the most part, medicine taken into the stomach, if it be not rejected, appears to be inert. This organ is not in a state to act upon its contents. Pills are thrown up unaltered an hour or more after they have been swallowed. It is better, in such a case, to leave the stomach to itself, and give medicine in the way of lavement. The main question is, Should opium be administered in this state? The highest degree of symptomatic delirium has yielded to an injection containing three drachms of tincture of opium, repeated after four hours; and, by a solution of three grains of the extract in a quarter of a pint of gruel so exhibited and repeated, the mind, from a state of incoherent wandering, has been rendered permanently clear and calm, with a corresponding improvement of other symptoms. In whatever way administered, it is only in full doses that this remedy is admissible in the high excitement of irritation; for larger will be required in such a state to affect, much less to control, the nervous system. If it succeed in doing this, its employment is attended with the happiest effects. In the low muttering delirium which accompanies sinking, the frequent repetition of a small dose of opium, as a pill containing a quarter of a grain every second hour, is decidedly beneficial. The extract of henbane is deserving of particular mention both as an adjunct to opium, and the best substitute when this is inadmissible. As an anti-irritant it should be given in doses of three to five grains every third or second hour.—P. 476–479.

There are also some particular symptoms which require attention. While the state of nausea continues urgent, no effective reaction can take place. Vomiting is its relief, and is to the oppressed stomach what rigor is to the oppressed heart. The system, after one full vomiting, experiences a lithesomeness, as after the removal of an intolerable burthen; but, if the unnatural action be renewed, and become habitual, it is as much a sign as a cause of exhaustion. Vomiting may be concomitant with a constipated or a lax state of the bowels. If it should be attended with constipation, stimulant drastic enemas should be exhibited. If with a free state approaching to looseness, a full opiate enema should be given; and, in most cases, five or ten grains of calomel, with one or more of opium, prove advantageous in this state, if retained. A spoonful only of fluid, as brandy and water, or strong tea, or coffee, should be taken by the mouth, and that seldom. A bladder of hot water, a mustard cataplasm, or a blister, should be applied to the pit of the stomach. The more immediate operation of the two former renders them preferable in urgent cases. The calomel and opium pill, and the injection both cathartic and opiate selected according to circumstances, has stopped urgent vomiting, when effervescent saline draughts, acids, alkalies, antispasmodics, cordials, and in short every liquid had been rejected from the stomach.—P. 469 to 471.

When hiccup is of an aggravated character, it is scarcely alleviated by any remedy. Its continuance seems to depend, like that of vomiting, on the absolute exhaustion of nervous energy, the presence of which is as necessary to repose as to action, to control as to excite.—P. 472.

The more particular treatment of constitutional irritation may now be discussed, in reference to its various causes.

Local irritation has been considered as terminating in constitutional irritation. On this point, nothing more remains to be remarked, than that the derangement of an organ is followed by consequences apportioned in seriousness to its degree and importance in the economy; and that constitutional irritation is as much more dangerous than local irritation, as the disorder of the whole is of greater importance than the disorder of a part. —P. 45.

In the treatment of inflammatory fever ensuing upon complicated injury, the chief indication is to tranquillize action without materially diminishing power. We ought not to be alarmed at fever, but at the want of it. We ought not to use any rough and permanently depressing or debilitating means to put it down, neither by bloodletting nor continued profuse purging and sweating. Irritation is a very possible result of treatment, as well as of malady; for by such means as too rapidly lower we incur the danger of converting inflammation into irritation, and thus of destroying our only medium of recovery. To moderate extraordinary action, it is sufficient to keep up such a determination to the secreting organs, as prevents their becoming so obstructed as to increase fever. The great bearing of the constitution, under a sudden call upon its powers, is decidedly upon the nervous system; and nervous power is much more easily depressed than raised. To a certain extent, the existence of fever, for which an obvious and adequate cause appears, is less trying to the system than the employment of such measures as are necessary to its sudden abridgment. For, if the inflammatory action be marked and vigorous, the nervous action which supports it is strong and inirritable, and the former cannot be suddenly pulled down, without a serious encroachment upon the strength and steadiness of the latter *.

An indication of equal importance is to indulge, to a certain extent, the first actions of the part by an easy position, and light and soothing applications. We should allow for the effects of local as well as of constitutional reaction; the swelling and tension must not be aggravated and rendered a source of additional irritation, by nice adjustments and contrivances, undoubtedly calculated to secure the best possible results, provided we could overlook or command the intermediate changes.

The application of lint, moist or dry, to a fresh wound, quickly becomes an irritant; and adhesive plasters, circular bandages, and splints, applied, as they too often are, while effusion is going on, operate as strictures and ligatures. Plugging a fresh wound to force suppuration, or strapping it to prevent that process, are equally liable to be followed by injurious consequences. In complicated wounds, as comminuted fractures, with extensive injury of the soft parts, often in the vicinity of large joints, and in penetrating wounds, attended with hemorrhage, the attempt to make them simple by leaving them in the original close dressings for many days in succession, has proved a common, and sometimes fatal mischief, inducing a diffused erysipelas and gangrene. A sufficient inspection of the part at intervals of two days, to satisfy an experienced eye of its well-doing, may be accomplished, not only without detriment to the process of healing, but with manifest relief to the patient. P. 495 to 498.

In the commencement of inflammatory diseases, whether affecting the brain or other organs, convulsions, if present, are of the sthenic kind, and subside by the free use of the lancet; but if this treatment be pushed too far, or the inflammation should terminate in effusion or disorganization, the powers of life yield, and they become asthenic or passive; that is, symptomatic of exhaustion. Such are the convulsions which appear after hemorrhage, or any other rapid depression of the system, and in the last stage of acute diseases. The smallest direct reduction of

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* Mr Travers, in speaking of the treatment of that extraordinary state of constitutional irritation which is often consequent upon slight wounds, thus remarks: "I have known eminent practitioners prescribe calomel and jalap every six hours within two days of the patient's decease, in the belief that so vitiated a condition of the visceral secretions, as of course and consequence exists, is yet the gravamen of the mischief. At the same time wine and strong nourishment have been proscribed. This is the ultraism of faith in certain doctrines, unimpregnable when unabused, but capable, like every thing excellent, of being injured by a blind devotedness. The most important practical indications which these cases convey are, 1*st*, Early and free venesection to the relief of pain; 2*dly*, Early and free openings of abscesses. If these are overlooked, the effective aid of medicine is questionable; if they are fulfilled, it is capable of affording most essential benefit, both in the stage of excitement and collapse."—P. 157.

strength will, in such cases, extinguish life. It can only be maintained by the timely administration of such aliment and medicine as support without exciting, and therefore tranquillize the system. (P. 144.)

The custom of letting blood indiscriminately, after accidents, is so irrational, that the authority of long established custom forms no excuse for it. A practitioner has tied up the arm of a person to bleed him, after a fall, in a pale cold state, in which the pulse could hardly be felt at the wrist. It is easy to see the motive of such operations; but it is an erroneous pathology, and a dangerous practice. (P. 461.)

In Injuries of the Brain.—A direct injury of the brain, at the moment of its occurrence, is liable to assume the common characters of prostration, which are in nowise to be regarded as proper and legitimate signs of cerebral mischief. The stupor, convulsions, and delirium which characterize injuries of the head, by their appearance after an interval in which reaction has been fully established, assume a pathological character very different from those identical symptoms occurring at the moment of injury. But if, after an injury unattended by hemorrhage, in which the head has suffered no direct mischief, the surface retain its natural warmth, and the pulse and the breathing be oppressed, and there be present stupor, convulsion, and inaction of the pupil, blood should be taken in such quantity as to relieve congestion, and its effect upon the symptoms duly noticed. If, on the other hand, stupor and convulsion be accompanied by a contracted and cold surface, and a thready or intermitting pulse, the cordial is the proper remedy. Greater freedom of circulation, and a consequent diminution of the stupor and convulsion, will be found to follow both one and the other practice, as it is judiciously resorted to. (P. 460.)

In Operations.—The most unfavourable circumstances attending injuries, in reference to the constitution, are profuse hemorrhage, the implication of many textures in a wound, the extensive detachment of cellular connections, wounds of joints and tendinous structures, and the comminution of bone. These have the most particular tendency to set up irritation of the constitution. The removal of a mutilated limb, provided the interval of time be so short as to identify the operation with the injury, anticipates, or at least infinitely diminishes constitutional irritation. The shock of the injury covers and identifies with itself that of the operation promptly performed. On the contrary, the continued irritation of the injury infinitely augments the first danger, and the state desired and promised never arrives in a vast majority of cases. (P. 487.) The hazard of operating upon persons in a state of rude health, has been before adverted to. As regards operations for chronic disease, the presence or bsence of visceral disorder, the habits of life, and those of the alady; as, for example, of air and exercise, or of rigid confinement, of taking opium or cordials, in any shape, are points for areful inquiry. A patient has been suddenly attacked with olliquative diarrhea subsequent to an operation under which he unk, from the discontinuance, it is supposed, of large doses of pium, which he had taken up to that time, without the knowedge of the operating surgeon. (P. 491). In some unfavourale results which occurred at St Thomas's Hospital from operaing upon some children for lithotomy, it was ascertained that he parents of them had been in the habit of giving them gin to llay the severity of the paroxysm in micturition. A different node of treatment was then adopted by supplying such patients vith their habitual stimulus, and the result was successful. (P. 187.)

In Hemorrhage.—The loss of blood is not fatal in cases in which the circulation, although feeble in the extreme, recovers and maintains its regularity, and no excitement remains, as in uterine flooding after delivery; but where an extra burthen lies, or is imposed, upon the system, whether the unrelieved uterus, the unrecovered shock, the mutilated limb, or the removal of it, the vital powers succumb. It is very questionable whether the administration of stimulants is not more frequently injurious in these circumstances than beneficial. Excitement to increased action, where the power is so much reduced as to be scarce able to maintain that which is necessary to life, only the more rapidly exhausts it. Hence it has been a good turn of fortune for many persons to have been left for dead, as it is called, on the field of battle. Sleep will restore, where alcohol destroys. On the other hand, it must be admitted, in cases of such extreme prostration as is indicated by the entire relaxation of the sphincters, that the very sparing, but frequent supply of a nutrient liquid, a teaspoonful at a time, or of a stimulus so diluted as not sensibly to swell the pulse, has sometimes succeeded in preserving life. (P. 187.)

If a single hemorrhage has been so considerable as to deprive the system of the material of nervous excitement and nutriment, the transfusion of a portion of human blood seems a fair and rational expedient; and it is clear, from Dr Blundell's experiments, that a much smaller quantity supplied, than that which has been lost, will suffice for this purpose. But if the system be at the same time so depressed by shock, or previously so exhausted by hemorrhages, or by any chronic disease, that the loss of a moderate quantity of blood induces the state of pure prostration, it is extremely doubtful if a fresh supply would renovate its powers, or be attended by any beneficial effect. For hemorrhage, whether active or passive, destroys, not from absolute default of blood to carry on the circulation, but from the complete exhaustion of nervous energy. (P. 506.)

When prostration with deficient reaction is the result of hemorrhage, support by nutriment in the most assimilable form, given in moderate quantities at short intervals, and by nutritive clysters, is the most important indication. To obtain the equal influence of the attenuated circulation, and to tranquillize the nervous system, a pure and fresh atmosphere, the preservation of a natural and warm surface, the sedulous exclusion of every cause of excitement, and a very cautious use of vinous stimuli, the danger of serous effusion being much augmented in this case, are the only means left us to pursue. (P. 507.)

In Burns and Scalds.—The immediate result in burns is determined by age, sex, constitution, the mode, extent, and situation of the injury, the texture, and even the treatment. In some instances pain extinguishes life, but in general it is a good symptom, for in fatal cases the complaint of pain is remarkably disproportionate to the mischief, or at least disappears early. (P. 106.)

No species of injury exhibits the symptoms of prostration in a more marked degree than burns and scalds, when of a severe description. The remedy upon which reliance may be placed in burns inducing this state is brandy in gruel, in the proportion of one part of the former to two of the latter. This may be administered in doses of a table spoonful or two at short intervals, until we obtain a sufficient distinctness and fulness of the pulse at the wrist, with a corresponding improvement of complection and temperature of the surface. The bowels should be simply kept unloaded, by means of castor oil or common injections. If there be much stupor, and the bowels have been previously costive, ten or fifteen grains of the compound calomel and scammony powder may be administered. The use of opium ought to be abandoned. In small doses it is inefficacious, and in large ones injurious.

The exhibition of the stimulus in burns requires unceasing and judicious attention; it must be intermitted if the pulse become bounding, and the patient flush. Nevertheless, in deep and very extensive burns of adult subjects, it may be necessary to persevere in its use for a week or ten days at lengthening intervals; occasionally intermitting, and always gradually withdrawing it. Not only has the partial remission of this plan been in some instances imperative, when re-action was permanently established, but symptoms of the head or chest have made their appearance, which required bloodletting, either topical or general; and a smart purge of calomel and scammony may be found on such occasions very useful. In deep burns the external remedy which is to be preferred, is the turpentine and olive-oil liniment, or turpentine and cetaceous ointment, upon the principle, hough not exactly the plan, recommended by Dr Kentish of Newcastle, and subject, after suppuration commences, to such hanges as the state of the surface may require. This appears o coincide advantageously with the internal use of the stimulant. The lime-water and milk liniment, and when suppuration has become abundant, the calamine or chalk powder, lightly strewed over the whole surface, and defended by the same or simple ointment, thinly spread on linen, is the local treatment which may be adopted in superficial burns. (P. 463.)

In Poisons.—The concentration, quantity, &c. of the deleterious substance, and the variations in susceptibility and general tone of the nervous system in different individuals, modify the phenomena of many poisons. On this account, their accurate classification is a subject of almost insuperable difficulty. Directly or indirectly they all destroy by irritation. The most serious effect, even of those which tend towards inflammation, is the primary one on the nervous system. (P. 396.) In inflammation of the deep seated absorbents, as from a puncture during dissection, when there is agonising pain, attended by inflammatory fever, relief is only to be obtained by free bloodletting. (P. 206 and 207.) But whether the inflammation precede or follow the disorder of the nervous system, the reciprocal fitness of similar modes of treatment in both cases is a point less open to question than the time suited to their employment. If the state of prostration without re-action or with excitement ensue as the consequence of a poison received into the system, the case will in its material features resemble those of direct irritation, produced by the severest forms of chemical and mechanical injury, as burns and complicated lesions. (P. 398.)

For the local treatment of a wound received in dissection, it is plain that if an escharotic be applied at all, it should be at the moment of dissection. It is an absurd and affected hardihood to persevere in dissection, and especially in visceral examinations, with recently cut or chapped fingers, affording every facility for absorption. When inflammation is set up, sufficient to draw the patient's attention to the injury, the same simple and soothing applications, which would be made to any inflamed part, are the most eligible. If much tension be present, the vessels may be emptied freely by a deep incision with a keen lancet through the line of the wound, and the part be enveloped in a poultice. For the erythema of the arm or trunk, folds of linen, moistened with the diluted liquor plumbi, or liquor ammoniæ acetatis, are probably the best applications. If in protracted cases, the cellular membrane becomes much loaded, incisions are beneficial to quicken the slow and imperfect suppurative action. With regard to constitutional treatment, no rules to hold in all cases can possibly be laid down. We should err equally in uniformly prescribing a stimulant, or a depressing treatment. Venesection is one mode of relieving congestion, but a more pernicious one could not be devised, where the congestion is the obvious result of a sudden and extreme depression of nervous power. Where the use of the lancet is prohibited, pain should if possible be allayed by opium. (P. 534 to 538.)

We have at length finished our analysis of this interesting work, which has extended to such a length as to allow little space for the critical observations we would offer upon them. But another opportunity may be afforded us for our remarks, as Mr Travers has announced that his researches are by no means completed. The phenomena of constitutional irritation at present discussed are named by him *direct* in contradistinction to other phenomena yet untreated of, which he styles *reflected*. By this arbitrary distinction, the author means to imply, that direct constitutional irritation is wholly and immediately derived from the part; that it commences, and is identified, with the local mischief; that the constitution has no share in its production; and that it never originates spontaneously. On the contrary, *reflected* irritation originates in a peculiar morbid state of the constitution, to which the injury or inflammation has given birth, or it may be previously existing. It is occasionally purely idiopathic; and being oftener the cause than the effect of the local action, is seldom influenced by local treatment. (Page 48.)—We look with impatience for a continuation of Mr Travers's researches on the subject of reflected constitutional irritation.

With regard to the present volume, our only complaint is against the arrangement of its materials, which is faulty in the extreme. We indeed candidly confess, that, until we submitted the matter which is contained in it to a perfectly different order, we despaired either of fully comprehending the author's views, or of entering into the force of his reasoning. But having performed this task (and we now present to our readers the result of our labour), we cannot express in too high terms our admiration of the volume before us. A more important pathological work has not appeared since the days of John Hunter. Mr Travers is the first who has successfully drawn the line of distinction between the phenomena of irritation and those of inflammation, which have been so long confounded together; and the effect which the principles he has inculcated promise to have upon general medical practice is such, as we think will ever entitle him to the warmest gratitude of his professional brethren.

PART III.

MEDICAL INTELLIGENCE, FOREIGN AND DOMESTIC.

I. PRACTICE OF MEDICINE.

Case of Bite by the Tarantula. By DR FRANCISCO MAZZOLANI. Osserv. Med. Nap. 1825.

J. BAPTIST PETRINI, aged 15, had, as is usual with reapers in Italy, during the harvest, slept all night in the field. Early in the morning, he was awakened by a sharp bite upon the second toe of the left foot. He cried out aloud, upon which his companions ran up to him, and found a large tarantula (*Aranea Tarantula*, Lin.), in his cloak, in which he had wrapped himself. The wounded youth was brought into the city (Naples), and the narrator called in. Dr Mazzolani found the toe very much inflamed; the patient disordered, with spasms, and *subsultus tendinum* of all the limbs, rigidity of the penis, contraction and tension of the abdominal muscles, so vehement, that they resembled a piece of leather. A cold sweat was spread over the whole body, the tongue moist, the aspect frightful; irresistible tendency to sleep, and complete powerlessness. He begged for some cold water, to extinguish, as he said, the fire which consumed within him.

As Dr Mazzolani considered the state of the patient to originate from weakness, he ordered him a clyster, three times a-day, of ten ounces of decoction of bark, with five grains of camphor, and twenty-five drops of laudanum; and, after each injection, to take ten grains of theriac by the mouth. For his usual beverage, he received good Orvieto wine; and, for the wounded toe, an embrocation of camphorated liniment. The appearances described continued for the whole day; but, on the following morning, the great sleepiness had disappeared, and the superior extremities had been restored, in some measure, to their heat. The remaining symptoms as on the previous days. The treatment was continued, and 15, and at length 20, grains of the theriac were administered. After this treatment had been proceeded in for five days, the coma and spasms of the lower extremities disappeared all at once, and the young man recovered.

The following affords a curious illustration of the opinions entertained, and the practice pursued, with respect to the bite of this insect, sixty years ago. We copy it from the Med. Mus. vol. ii. p. 350. (Translated from the Italian original.)

"SIR,—According to your desire, I send you an account of the effect the bite of a tarantula has upon the human body. I shall only give a distinct detail tions, with ammonia, which restored the heat, but not the movements of the heart. They endeavoured to make the animal swallow ammonia, properly diluted with water; and, in a little time, the creature was seen, full of life, defending itself, and moving actively as before the experiment. Astonished at the circumstance, the Professor repeated the experiment, in like manner, with two drops of the prussic acid, but without having recourse to ammonia; the rabbit died, just as would have happened in the first time, without the trial of the antidote. The horse died in 17 minutes, with 15 drops of the acid.

Observations on the Winds, and the Sickness amongst Strangers in Havanna, from August 1821 *to September* 1822. By Daniel Osgood, M. D. (From the Philadelphia Journal of Medicine.)

In 1821, after the sun had been declining two or three weeks from the tropic, nearly under which the city of Havanna is situated, the season began to be more healthy than it had been a short time previously. The wind had prevailed from the east, or the west, along the coast; but, at the latter end of July it began, and continued for a while, to come alternately, by day, from the open sea, on the north, or the north-east, and by night from the land on the south. The weather mean time was neither remarkably wet nor dry; near the last of August it became more calm. With this change occurred a few instances of fever, of a worse character than had appeared for nearly a month before; exhibiting now the symptoms of the genuine yellow fever.

After the calm and hot weather of the latter part of August, heavy showers of rain began to fall, attended with much thunder. A change of the sickness of the season took place for the better, with this alteration of the weather. Some instances of persons falling ill, however occurred, from exposure to wet. These were easily restored to health, by taking plentiful draughts of weak aromatic herb infusions, a purge of the compound powder of jalap, and after its operation, thin farinaceous or fresh meat broth diet, for three or four days. Neither mercurial nor tonic medicines were found necessary or serviceable, in the generality of these cases.

Abundance of rain had fallen in the first twelve days of September, which greatly cooled the earth and the air. Fever was now rarely seen, and not at all exhibiting malignant symptoms, excepting in the individuals who had been either neglected or maltreated in the beginning.

A violent gale from the north commenced on the 13th of September, and ended after having continued 48 hours. The winds afterwards varied, and rains occasionally fell, until the 16th, when the weather became settled, with breezes alternately blowing, in the early part of the day, from the land, and in the latter part, from the sea.

The cases of the fever which occurred during these winds, required free evacuations by purging, but not bleeding; the symptoms being simply increased heat, fulness, without great hardness of the pulse, pain in the head, weakness, a bitter taste in the mouth, and a white or yellowish appearance of the tongue. It was required that the patients should neither expose themselves to a free current of air, nor be closely confined from it; and that their diet should consist only of water-gruel or thin chicken broth. A clyster of sweetened water and vinegar was administered once or twice a day. This treatment was enjoined, a purge being given occasionally, until the increased heat, &c. had been removed; which happened, in most cases, by the fourth day; and, after this period, most of the patients were regulated by their own prudence, being left with either no medicine at all, or only some aqueous bitter preparation to strengthen the digestion; a month passed after the last gale, without the occurrence of fever with malignant symptoms.

The weather was warm and calm, between the middle of the second and the middle of the fourth week of November; before and after which periods, the north wind prevailed for a few days only. While the weather was calm,

several cases of the yellow fever occurred. The subjects were first seized with extreme muscular debility, small pulsation at the wrists, but violent throbbing in the arteries of the neck and temples; a countenance expressive of apprehension of danger; and great heat and soreness of the stomach. The stools and urine discharged were crude at first; but, after two or three days, corrupt matters were ejected, and the pulse became harder. A universal yellowness came over the body, beginning about the fifth day, and growing deeper by degrees; and a blackish substance was about this time vomited, accompanied by a hiccup. The disease terminated fatally, as early as the seventh day, in some instances; and, in others, the patients held out from that day to the eleventh or later. Bleeding proved of no benefit to any at this time, neither did it appear to do harm. Of those for whom bleeding had seemed to be indicated, some recovered, and some died, whether this operation had been performed or not.

Early purging proved of the greatest service. A large dose of calomel alone, and after it a dose of purging salts, and these followed by an infusion of senna, with a mixture in it of manna, cream of tartar, and magnesia, repeated frequently in divided doses, had the best effect. Blistering on the first and second days were found indispensably necessary for alleviating the uneasiness of the stomach and the head; and, as soon as the heat and pains had been reduced, an infusion of gentian, or some other bitter medicine with the Virginian snake root, were required to be taken freely.

The latter part of November, and the first days of December, proved very cold and stormy; after which the weather became remarkably clear, and warm for the season; and thus continued until the 19th, at which time a very little rain fell, and the air again grew cooler.

Numbers were attacked with fever during and shortly after this sultry weather. The sick experienced very little heat or pain; but the strength of those who finally died was greatly prostrated from the beginning; and they loathed all drinks and medicines. Whatever was taken passed off in a crude state by stool or vomit. Death took place from the seventh, or from that to the twelfth day. In most of the cases which proved fatal, appearances indicating an erythematic inflammation, and a subsequent gangrene of the stomach and intestines, were observed. In a middle-aged, corpulent, and florid subject, on the fifth day of his fever, an inflammation appeared, first around the anus, which afterwards spread rapidly over the *perineum* and *scrotum*, and terminated in a gangrene of the parts before death. Bark and wine, the mineral acids, and other antiseptics, astringents, and stimulants, were administered freely in some of these cases, on account of the heat being found below the natural standard, and the debility extreme. These medicines proved manifestly detrimental: none recovered to whom they had been prescribed and administered; while others became convalescent without them, by means of free operations effected by cathartic and other evacuating medicines. The proportion of fatal cases, under this treatment, even when most timely employed, was one in three.

The weather, in the remaining part of December, was moderately variable; and slight rains accompanied some of the changes. The instances of fever were few; and of those all terminated favourably, for which purgative medicines, and clysters, farinaceous nutriments, and, lastly, slight diaphoretics, were judiciously administered.

On the last day of December, a storm of wind and rain set in from the sea, and the change of the temperature was very great. The weather, on the 1st of January 1822, was clear and cold, and continued so for several days; afterwards the wind shifted, first to the southward, then round again to the northward, and alternated thus from time to time, through the whole of this month. The same treatment was practised for the cases of fever, in the mean time, as had been made use of in the last days of the preceding month; and with the like favourable success. The months of February and March were, as they usually are in this place, boisterous; and, excepting from accidental exposure, no strangers fell ill with fever, in consequence of predisposition acquired here.

Near the last of April, the weather became suddenly hot and close, and continued so, without rain, to past the middle of May. In this interim, cases of yellow fever arose, some of which proved fatal, notwithstanding seasonable medical advice was had. Bleeding and mercurial purges for the plethoric, and the same medicine without bleeding for the very slender, or the very fat, were the means found most successful for the cure.

A little rain fell in the last week of May. After the first of June showers were frequent. The rains cooled the surrounding hills, and were followed by breezes from the sea. After these changes of the weather, the fever became less prevalent, and of a milder character than it had previously been. No other remedies than timely cathartics, followed by cooling aperient and unnauseating drinks and medicines, and a thin diet, were required, in the treatment of the patients at this time.

The weather after the first weeks of June was very hot and dry, but not close. Several persons, in consequence of the extreme heat, were slightly delirious, without being actually inflamed, or affected with fever. By retiring from noise, and observing a cooling regimen, without medicine, fever was prevented. The contrary management brought on a confirmed fever. The patients I now had, I evacuated freely by the means of the submuriate of mercury and clysters, in the first day or two of their disorder; and afterwards for another day, with equal parts of the flour of sulphur and cream of tartar, in small and repeated doses, amounting to half an ounce of each in the day. During the two or three next days, the infusion of cinchona, with Virginian snake root, was given, and, if the bowels were slow in their movements, manna and rhubarb were added to the infusion.

Such is my practice, at this moment, the 14th of June, the sun, at mid-day, being directly in our zenith; the weather dry, and the sea breezes blowing, in the hottest part of the day, so as to ruffle gently the surface of the water throughout the harbour.

On the 15th, it commenced to be wet and stormy, with interims of sunshine and calm weather; and so continued for three or four days. Numbers of the sick at this time were subject to syncope, whenever they had occasion to sit in an erect posture. The pulse was seldom quicker than eighty or ninety strokes in a minute; but the circulation of the blood was heavy, and the breathing laborious. Of fifteen patients who were treated in the manner last mentioned, three died.

Persons who had resided for several years within the city, had fever with malignant symptoms, at this time; for some of whom the mercurial treatment was practised, as for the strangers; by which means they recovered to a state of convalescency, on or before the fifth day. Others who, though but slightly feverish at first, took only simple laxatives and cooling beverages, as is the practice amongst the creoles, were left with a jaundice, for which the submuriate of mercury, combined with opium, became a necessary remedy.

Two or three days of calm and clear weather preceded the 22d, the time of the solstice, when a heavy rain fell, which was followed by a strong south east wind. But after the sun had passed this latitude, on his return towards the south, the weather became showery and irregular. Calms and squalls, sunshine and rain, alternated, from this time, to the 13th of July. The fever began to be more prevalent in the last week of June, and so continued to the middle of July.

It rarely, however, attacked any but the worst subjects for it: such as youths of about the age of puberty, men and women near to the change of life, from the middle to old age, and such others as in a cold climate would be regarded as the most healthy. The predisposition to the disease being very strong in these subjects; in the like degree the disease proved to be violent.

From the 13th, to the 22d of July the weather proved more cool than it had been for some time before, a northerly wind blowing steadily, and tempering the heat of the vertical sun.

The fever which took place during this interval, happened, in most instances, after a sudden suppression of the perspiration, from exposure of its subjects to a strong current of air. These patients, by lying out in the air, in a spacious room, drinking freely of chamomile infusion, and by taking from five to ten grains of the compound powder of ipecacuanha, to restore the perspiration, and afterwards a dose of the compound powder of jalap or scammony, threw off the disorder. But if such treatment was neglected, a confirmed fever, which terminated in the black vomit, ensued.

On the 23d of July the weather became showery and sultry. On the 26th, the wind changed to the north-east, and blew in a steady current through the day, excepting a part of the morning, to the 29th, after which showers and calms alternately occurred till the 31st. Then for four weeks the sky was clear, and the sea or land winds blew, as is usual, in the hottest weather.

For a month past, this being the 1st of September, of all the patients I have visited, twenty-nine in number, belonging on board of merchant vessels, but few have had very bad symptoms, and not one has died. The medicines employed for promoting the circulations, secretions, and excretions, in the minuter vessels, after evacuating the larger organs, in some few instances, both by bleeding and purging, and in most by purging alone, was the sulphuret of potass given every sixth hour, in doses of from ten to twenty grains, made into pills with castile soap and powder of liquorice.

In the latter part of August the weather was excessively hot and dry.

No rain had fallen from the last day of July to the fifth of September. The sickness on the 1st of September began to be much more violent. Of ten patients on board of one vessel three died.

The prevailing fever of Havanna, during the time of the occurrences above related, was of a milder nature, for the most part, than it usually is. Fewer calms and less prevalency of the winds from along the coasts, have mean time been experienced.

Manuel de Clinique Medicale, suivi d'un exposé des Signes des Maladies et d'un precis d'Anatomie Pathologique. Par L. MARTINET, Chef de Clinique de la Faculté à l'Hotel Dieu de Paris. 18mo, pp. 552. Paris 1826.

A Manual of Clinical Observations, containing the manner of observing, and the different modes of exploration; to which is added the Symptoms and Pathological Anatomy of Diseases. By L. MARTINET. 8vo. pp. 552. Paris, 1826. (Translated, with Notes, by J. QUAINE. 18mo. Lond. 1826.)

THIS little breviary of the symptoms of diseases, and of the mode of investigation best adapted to ascertain their presence, might, in this country, have perhaps been published under the denomination of a Manual of Symptomatology. It is precise, accurate, and has the merit of bringing within a small compass, the most essential characters of disease. The different maladies of which it comprehends the symptoms, are arranged according to their localities, as follows:—Diseases of the brain, and its dependencies; of the spinal marrow; of the chest; of the heart, and its dependencies; of the abdomen; of the urinary passages; of the genital organs; of the tissues, as 1*st*, Of the *cutaneous*, *cellular*, and *mucous*; 2*d*, Of the *cellular* tissue; 3*d*, Inflammation of the *mucous membranes*; 4*th*, Diseases of the *muscular*, *fibrous*, and *synovial* tissues; 5*th*, Diseases of the *vascular* and *nervous* tissues; 6*th*, General diseases. To these succeed fevers and poisonings, because still without any settled local habitation. It is probable, that the names employed in artless arrangement are those in most familiar use among our neighbours across the channel; yet we observe in the catalogue, the following new diseases, which, though almost all known in this country, would be looked for in vain in the best of our systematic works. *Arachnitis*, *softening of the brain*, *tubercles and cancer* of the brain, *inflammation* and *softening* of the spinal marrow, *tumour* of the spinal marrow, *edema of the glottis*, *pleurodynia*, *pulmonary apoplexy*, *pulmonary gangrene*, *pneumothorax*, *aortitis*, *pericarditis*, *hypertrophy of the heart*, *softening of the heart*, *glossitis*, *cancer of the pharynx*, *esophagitis*, *cancer of the esophagus*, *cancer of the liver*, *encysted dropsy of the liver*, *indurated cellular membrane*, *phle-*

bitis, asphyxia from deficiency of respirable air, as on the summits of lofty mountains. Zealous as we are for the welfare of the profession, we would not be thought anxious to swell the list of those evils which beset mortality: yet if the maladies here commemorated are each susceptible of being distinguished by symptoms to be learned at the bedside of the patient, we see not why they should not find a place in our nosologies. It is but a few years since it was thought impracticable to distinguish many affections of the heart, chest, and skin, which are now universally recognized during life. Men do not now, as formerly, sit quietly by, in expectation of the dissection, in order to discover the nature of these diseases: they boldly predict what that dissection will exhibit,—in most instances, a satisfactory confirmation of the practice pursued. It is certain, at least, that the subject is entitled to all consideration: and, though we are not inclined to lay much stress on the sufficiency of many of the "diagnostic signs" given in the present little volume, we yet feel disposed to recommend the compilation to superficial readers. A few extracts are subjoined.

"AORTITIS. *Diagnostic Symptoms.*—Considerable augmentation of the pulsation of the aorta, and sometimes even of the large vessels; possibility of appreciating those of the aorta towards the notch of the sternum: in some instances, a sensation of heat and pain in the part inflamed, possibly accompanied with anxiety or faintness. When aortitis becomes chronic, the arterial circulation ordinarily becomes slower, and signs of dilatation, or hypertrophy of the heart, may frequently be observed." P. 333.

"PNEUMOTHORAX. *Diagnostic Symptoms.*—Progression rapid, general demeanour grave, percussion yields a clearer sound on the affected side, at least if there are no old adhesions, in which case the reverberation is natural in these points only. In the case where pneumothorax is complicated with effusion into the pleura, the chest resounds very well in the portion which contains air, whilst it is dull where the fluid is accumulated. Respiration is completely suspended in the diseased side, except towards the root of the lungs, where it is ordinarily insensible. On the sound side, which is less sonorous, it is heard readily. When the effusion is considerable, the side affected is dilated. In all these cases there is a total absence of every species of rattle (rale). If a bronchial fistula exists along with the pneumothorax, metallic reverberation and respiration are observed. If, with the bronchial fistula, there is gaseous and liquid effusion, in addition to the tingling, the metallic reverberation and respiration, succussion occasions a noise which results from the agitation of a fluid effused. Where the double effusion exists, without the fistula, the above noise, and the metallic tingling, are alone heard." P. 331.

"EDEMA OF THE GLOTTIS. *Diagnostic Symptoms.*—Pain or sense of uneasiness in the superior region of the larynx, communicating to the patient the sensation of a foreign body moving in the act of deglutition, and, at that time, susceptible of being placed in the opening of the glottis, or of throwing itself upon the sides of the glottis during expiration. Respiration offering, from the commencement of the disease, an extreme difficulty, returning, in particular, by fits, and accompanied with threatened suffocation: expiration free and easy. Voice hoarse, more or less weakened, sometimes completely extinguished. If the finger is carried to the base of the tongue, about the superior extremity of the larynx, a soft purse-like tumour is to be perceived around the opening of the glottis. The fits of suffocation approach each other at shorter intervals, and the patient, in general, dies suddenly." P. 298.

Mr Quaine's translation is respectable.

On Diseases of the Blood. By M. SEGALAS.

M. SEGALAS, wishing to demonstrate that the fluids may be the seat of primary alterations, and so great, that the disorder of the organs and the disturbance of the functions are merely their consequences, has made numerous experiments upon dogs, with alcoholic extract of nux vomica; and, proceeding from one conclusion to another, he at length determines, that intoxication is the result of a true disease of the blood; that the local phenomena of general poisoning, by nux vomica, may be manifested independently of the general nervous system, and absolutely depend upon the local circulation; a fact which will explain, according to him, why nux vomica causes paralyzed muscles to contract in preference to others. In order to admit those consequences, it would be necessary to prove that nux vomica, given internally, passes into the blood of the paralyzed muscles rather than into that of the other muscles; consequently this pretended explication explains nothing. Moreover, it becomes necessary to suppose, that alcohol produces in the blood of the upper extremities an alteration which communicates to them more force in their contraction, whilst the reverse takes place in the inferior extremities; finally, it would be indispensable to prove that the contraction and vicinity of other nerves act upon the blood like alcohol, for these three circumstances exalt prodigiously its activity.

Mr Segalas promises to investigate what are the diseases that ought to be considered as having their seat in the blood. If he continues as he has commenced, he will certainly arrive at this conclusion, that all diseases are primary alterations of that fluid: it will merely be necessary to prove that the stomach is always under its influence. It would, however, be necessary for Mr Segalas to say what sense he attaches to the term true *disease*.

On Insanity. By M. Pinel.

Mr Pinel *junior* has advanced an opinion which merits considerable attention, and which, if true, tends strongly to confirm how much we are the dupes of words in medicine; it is, that mania, melancholy, and dementia, are to be considered merely as three stages of one and the same disease. Strictly investigated, this idea may perhaps put us in the way of a better pathological theory of insanity.

Asphyxia.

Mr le Roy lately communicated to the Academy of Medicine a memoir upon asphyxia, in which he proposes two modifications in the treatment of that affection. He advised at first only to inspire the air slowly into the lung, from danger of tearing the delicate tissue of the pulmonary organ, by strong inflation; it is thus that, by the latter mode, it is constantly producing death in different animals. It would appear, according to these facts, that the precept given by Monro, of throwing at once, by a strong inspiration into the lungs of the asphyxiated, all the air which they can contain, is often dangerous. The second modification which he proposes, is to substitute to the bark injections the employment of galvanism, directed immediately upon the diaphragm, so as to produce its contraction. Mr le Roy has made various attempts of this sort upon animals that he had asphyxiated on purpose, and is obtaining still more happy results. When it is determined to apply this method to man, a pile of 15 or of 20 pairs of galvanism, of an inch and half in diameter, is necessary.

N. B. We refer our readers to our last Number, p. 146. for the method of Mr Murray, who proposes to inflate the lungs through a cylinder which regulates the quantity and quality of the air. Of his method the present may be a piracy; but to the experiments we can give no credit as here announced.

Intoxication. Royal Institute of France.

Monsieur Mazuyer transmitted a memoir upon the effects of acetate of ammonia against intoxication. According to him, this salt dissipates the latter state, in less than five minutes. We have spoken elsewhere of this property, which is common to it with ammonia, as is well known; and we only notice it here, to introduce what he has said in detail respecting the happy application of another salt proposed by the above physician for the treatment of gout. Mr Mazuyer having constantly found uric acid in the bony concretions of arteries and veins of gouty persons, he thinks that this acid constitutes the immediate cause of gout, and argues forcibly against the opinion that it is merely simple inflammation. According to this idea, the employment of a soap, of which the base is potash and acetate of that alcali, is, according to him, the best treatment that can be pursued: if vegetable diet is favourable to gouty persons, it is because vegetable substances contain potash: if milk also exhibits some advantageous effects against gout, Mr Mazuyer fails not to attribute this honour to the potash which it contains, and which, in his opinion, is probably in the state of acetate. It appears certain at least, that, in England, a fit of the gout is sometimes prevented by purgatives combined with calcined magnesia. It results from the labours of Mr Mazuyer, that the treatment of gout might become more rational in future, and that it ought to consist in neutralizing, by every known expedient, the uric acid which is found to exist morbidly in the blood.

Before him Mr Berthollet had made known the presence of an acid after the paroxysms of gout, yet without indicating that it was the uric acid.

Jahrbucher der Ambulatorischen Klinik zu Halle, &c.

Annals of Ambulatory Clinical Medicine of Halle. Published by P. Krukenberg, Doctor of Medicine and Surgery, Professor of Medicine in the University of Halle. Wittemberg, 1823.

In some universities of Germany, domiciliary aid is administered to the sick, under the direction of the Faculties of Medicine, and these become at the same time philanthropic institutions and schools of medical observation, which have received the name of Ambulatory Clinics.

Professor Krukenberg formerly published a very interesting volume upon the principal diseases observed in the clinical practices of Halle, and the present volume yields in no respect to its predecessor. The author is specially occupied in the latter with the study of diseases, of which the diagnostick is the most difficult and most obscure. He only notices cases in which anatomical examination has been made, and traces his general descriptions solely after such observations.

In the third section, the author considers hydrocephalus externus. In the cases of that disease which have fallen under his observation, he recognizes two very distinct periods, of which the first is characterized by inflammation of the brain, and of its membranous envelopes; the second by exudation of the serosity and symptoms of compression of encephalon. Dr Krukenberg explains with the greatest exactness the long series of symptoms which distinguish each of those two periods, and mentions a multitude of unusual phenomena, the principal of which we shall borrow from his work. In some cases, the patient begins by experiencing alternate fits of shivering, heat, and perspiration, exactly as in the intermitting fevers. The pulse preserves its regular frequency, or is rendered considerably slower. Then a diarrhea supervenes, the skin becomes flaccid and dry, is covered with small colourless eminences, more numerous upon the external part of the arm, upon the lips, and upon the cheeks. The patients observed by the author carried almost always their hands towards the genital organs. The duration of that period is from three to ten days, seldom longer. In the second period, the vomiting frequently ceased, the abdomen subsided, the white pimples became more numerous, and sometimes red spots like purpura were observed along with them. The intellectual faculties often recovered their integrity a short period before death; some of the sufferers had the voice nasal. In a patient of three years, the penis was almost constantly in a state of rigid erection. The pulse became accelerated during the last days of life, and frequently presented 130 pulsations in the minute. That second period lasted from five to eighteen days. A very small number of patients did not sink before the end of some months. On dissection, there was found, in several cases, a notable thickening of the arachnoid membrane, with pisiform bodies, and small vesicles in its substance. The brain was often covered with coagulable matter, which was also found in the ventricles.

With regard to the etiology of acute hydrocephalus, the author has remarked, that there exists in certain families a particular disposition to these affections; he has seen it attack six, and even eight children, brothers and sisters. He arranges in the number of its causes the abuse of narcotics, and the application of stimulating substances to the ulcers which appear behind the ears of children. The prognosis of acute hydrocephalus is very alarming, and its termination almost always fatal in the second stage; a few patients advanced to it, merely escape death to remain paralytic, or subject to epileptic paroxysms. At the end of the section, Dr Krukenberg points out a disease which merits distinct description in this place: it is observed in dry and hot seasons. The attack took place with vomiting and purging alternately, of a muco-bilious and dilute substance. The face exhibited a pale and dirty aspect; the patient resembles, he says, figures of wax, becoming yellow by exposure to the air. Blue streaks were observed between the eyes and the nose. The belly was soft, and without pain, urine regular. The patients were silent, dejected, but they preserved their understanding quite entire, till their death, which took place in a short time. On opening the body, all the vessels, but especially the veins, were gorged with venous blood, apparently dissolved, and not unlike a solution of prussiate of iron. The spleen was gorged with blood, and much softened. The intestines, as well as the surface of the liver, were variegated with black spots.

Of the Epidemick Cholera Morbus of Amboyna. Extracted from the Medical Journal of Mr Lesson, kept during his voyage round the world, in the frigate La Coquille.

The cholera morbus which has wasted the population of Amboyna, is the same epidemick disease, which, after having reigned in India, has extended its ravages to the Philippine Islands, to Bourbon and Mauritius, to Java, in particular to Samarang, and, consequently, did not arrive at Amboyna until after it had raged at Ternate, the Celebes, and Banda Islands. This visitation has passed through vast regions, without ever affording much hope for the life of those whom it attacked at the period of its greatest intensity. Indeed, what resources could medicine employ against an affection which precipitates the patients, for they are carried off in the course of a few days, and very frequently in the course of a few hours? It has been remarked, that robust and athletick persons sink more frequently under it than the delicate and weak.

The physicians agree in considering the cholera morbus as an acute abdominal inflammation, with lesion of the nervous system, and susceptible of being communicated as an epidemick, in certain climates, by a peculiar miasma; the organs are predisposed to favour the action of the earth, by the influence of the atmosphere, or the diversities of the mode of life. They distinguish two species of cholera morbus:—the one inflammatory, characterized by redness and considerable heat, or, by the fulness and redundance of the pulse; the thirst is ardent, the eyes watery and injected. In the other variety, there appears to be a severe and sudden attack of the abdominal viscera, disorder of the nervous system, pulse small as in gastritis, great depression, bringing with it complete collapse of the moving powers, not less in the other parts of the body than in the seat of the complaint.

Cholera always commences with an acute pain in the abdomen, accompanied by violent headach; the eye is then shining, red and watery. The pulse is full or small, quick or slow in its beats; to this first symptom there are joined repeated vomiting and purging, followed or accompanied by spasmodic contractions, of a very alarming nature.

When at last the symptoms have arrived at their highest degree, there is absolute loss of sense, coma, and subsultus tendinum. Death takes place after four, five, or six hours, from the moment at which the first symptoms appeared. Sometimes, particularly toward the decline of the epidemick, this series of phenomena succeeded more slowly, so as to afford a hope of the possibility of opposing to it an efficient barrier, and of protecting its victims. When along with the cholera a vehement paroxysm of fever supervenes, a happy event may be conceived. The same is the case when vomiting does not appear at all, or when it is not particularly violent; or, lastly, when it does not occur till late in the disease. The most vigorous persons are seized with extreme rapidity, and we had a melancholy example of this in the case of two Englishmen, who were landed three or four days from our vessel, as passengers from Otaheite. These two seamen enjoyed an athletick constitution: as soon as they were landed, they gave themselves up to great irregularities, getting drunk every day, and sleeping upon the grass during the delicious coolness of the evening. After four days of this mode of living, Moor and Wright were attacked with cholera, and entered the hospital in the evening of the 12th, at a few hours interval from each other. On the morning of the 13th they were no more.

In spite of the terror produced by death so sudden among the crew of the Coquille, in spite of the precaution of confining them, which had been taken at the request of the surgeon, the boat's crew, who had it in their power to escape inspection, hurried towards the land, and intoxicated themselves with wine of Saguères. Five men from the corvette presented the milder symptoms of cholera, although the position of the Coquille in the bay insulated that vessel from the source of the epidemick.

M. Longaker, chief surgeon of the Moluccas, who formerly served under the orders of Mr Sper of Toulon, resided at Macassar, when the cholera exercised its influence. It prevailed in a frightful manner, destroying, almost in an instant, 550 individuals in the thousand. According to the expression of that practitioner, "the sufferers were struck down as if by lightening." The disease rarely lasts longer than three hours, and he has seen dogs, and even oxen affected with it; Mr Lesson saw at Amboyna a young baboon, which exhibited all the symptoms of cholera, and died, before his eyes.

The method of treatment to be employed is generally that named antiphlogistick and antispasmodick. Bleeding in the commencement, leeches upon the abdomen, revulsive medicines, then sedatives and opiates, are much used by the Dutch practitioners, who, like the English, have a particular predilection for calomel, which they employ almost universally.

The following abstract of the ravages made from the moment of its invasion to the departure of the Coquille, is extracted from the journals of the Military Hospital.

In March 1823, the cholera had not yet appeared. There were only 131 patients in the chambers, amongst which, during that month, fifty-three were cured, five died, and seventy-three remained for the following month. Of the five deaths two were from diarrhea, one from dysentery, and two from fever, combined with catarrh.

The cholera appeared in April, at the end of the month; in one single week, a captain and three lieutenants died of it, as well as a great number of the inhabitants. It may be computed, that nine died out of every twenty-four. Towards the decline of the epidemic, during our stay, we determined, by approximation, the degree of $\frac{1}{18}$ of the whole, and in the most favourable periods, at $\frac{1}{17}$ only. Cholera morbus was not yet extinguished at our departure, the 27th of October 1823. Every day the death of some one of the inhabitants was announced. That of a Chinese Captain was singularly remarkable. There succeeded often to the cholera a very fatal nervous fever, which scarcely ever was followed by recovery. It was feared that the change of the monsoon, accompanied with storms along with it, might increase its activity, or, at all events, rekindle the fire about to be extinguished.

Report of Military Hospital.

Month.	Number of Sick.	Cured.	Died.	Remained in the Hospital.	Cholera Morbus.	Cured.	Died.	Remained the month following.
April,	223	104	43	76	77	26	38	13
May,	148	78	9	68	35	27	5	3
June,	120	54	5	61	8	2	3	3
July,	120	58	3	59	4	2		2
August,	144	86	2	56	15	6	11	8
September,	126	59	12	55	23	11	10	2
October,	122	34	8	80	10		4	6

Professor A. NUMAN's *Researches upon Small-Pox, when produced in the Domestic Animals by Inoculation.* From the Magazin der Auslandischen Literatur, der gesammten heilkunde, Von Gerson und Julius. April 1826.

WE recommend these singular researches of Dr Numan, Professor of Veterinary Surgery at Utrecht, to the consideration of all practitioners of the healing art, whether amongst men or animals. The substance of their results is, in short, as follows: Cows are not only susceptible of inoculation by the smallpox, but also by the cowpox, from men, and even from their own proper cowpox lymph, when recent. The bull, of whom it is usually said that he is subject to the natural pox, is also susceptible of inoculation, both by the natural and cowpox. The same is the case in the horse and ass, but the cowpox matter transferred to them from man, operates more slowly than that which has been reinoculated from the vesicles of the cow.

Abstract of a Memoir on the Anatomical Characters of Chronic Gastritis. By Monsieur ANDRAL *Junior.*

Part I.—*Alterations of the Mucous Membrane.*

IN the great majority of cases of chronic gastritis, various morbid alterations are found in the mucous membrane of the stomach. Sometimes, however, it appears to be perfectly healthy, while we meet with very remarkable changes in the subjacent tissues, more especially in the cellular tissue, which unites the villous to the muscular coat. Are these alterations primary, or did the disease begin in the mucous coat, now restored to its natural state? When membranous, or parenchymatous, tissues, are seized with inflammation, the parts in contact may participate in the morbid state. In this case, resolution may take place in the parts primarily affected, while the inflammation passes to the chronic state in the tissues secondarily affected. In a patient dying in the early stage of enteritis, the mucous membrane is alone affected, it is either simply red, or softened, or ulcerated; at a later period, we either find the mucous membrane alone affected, or we find alterations also in the subjacent tissues; both may be equally affected, or the alteration in the mucous membrane may be of such a nature as only to be discovered on attentive examination. Thus, though white, it may be softened and pulpy in parts, or it may be of a greyish, brown, or black colour, in patches or bands. Again, we may find superficial ulcerations, the bottoms of which are on a level with the edges, and of a white colour, evidently proceeding to cicatrization. Here are only the remains of inflammation; but that form of ulceration, that white softening, indicates that it has existed in an intense degree. Here the disease is disappearing in the mucous membrane, and subsisting in the subjacent tissue; and cases may present themselves in which the mucous coat is perfectly healthy, while the subjacent tissues are more or less profoundly disorganised. In the eye, inflammation, which commenced in the conjunctiva, may disappear from that membrane, while the cellular tissue which unites it to the sclerotic, remains inflamed, infiltrated with pus, becomes thickened, and undergoes various alterations. The same remarks apply to the urethra after gonorrhea, the skin, synovial membranes, &c. Besides these analogical proofs, (says M. Andral), that inflammation, whose traces are now only to be found in the subjacent tissues, has primarily commenced in the mucous coat, we have also direct proofs from observation. Thus, we have more than once been able to trace the intermediate stages through which the mucous coat has passed in returning to the healthy state. At the time that different alterations of the subjacent tissues existed, I have found the mucous membrane red, thickened, softened, sometimes ulcerated; sometimes the traces of disease in the mucous coat were much less evident, it was, for example, soft but white. In a patient at La Charité, who, three years before death, had laboured under acute gastritis, and had since that period been affected with dyspepsia, the subjacent cellular and muscular coats were, in one point, thickened, and of a cartilaginous hardness. From these parts, the mucous coat had entirely disappeared, but the ulceration was so white and superficial, that it could not at first be recognised. A similar appearance in the cellular and muscular coat was observed near the pylorus, but the mucous coat was unaltered.. In a short period, the traces of disease would, in all probability, have disappeared from the mucous membrane in the part first described, and cicatrization have taken place. In many cases in which digestion had been painful and laborious, the mucous membrane appears, to our feeble means of investigation, to be sound; and thus, it would appear that there is a period in which the mucous coat, though no longer inflamed, has not recovered the power of performing its functions. Thus, the bronchial membrane may appear healthy, while it continues to pour out an abundant puriform discharge.

The mucous membrane in chronick gastritis most usually presents different alterations relative to its colour, consistence, thickness and form. These may exist singly or combined.

Colour.—Some shades of alterations of colour belong equally to acute and chronick gastritis, others denote more particularly the existence of chronick inflammation. These are the grey, slate, the brown, and black, more or less deep. Orfila, however, produced these shades of colour, by inducing very intense inflammation in the stomachs of animals, with irritating substances; but in man, though very common in chronick gastritis, they are extremely rare in acute, and it is most probably they can only take place in poisoning by acrid or irritating substances. Here, then, we have the same shades of colour when inflammation has arrived at its maximum of intensity, and in cases where it manifests its presence by symptoms of little violence.

Mr Andral considers these colours, the grey, slate, brown and black, when occurring in the mucous coat of the stomach, as undoubted proofs of inflammation, most probably chronick, having existed there; often when these colours exist, we find the mucous membrane thickened, hard, or covered with vegetation. Ulcerations of the stomach, and still more frequently of the intestinal canal, are surrounded by these shades of colour.

The brown tint is sometimes exactly circumscribed to a small number of isolated points, with the mucous membrane healthy and white between the stains; we also find brown patches of greater or less extent, or bands, or lines, of the same colours; and with the eye, or with a glass, we can perceive that they are owing to a conglomeration of vessels of an extremely minute diameter. The mucous coat, however, in chronick gastritis, may be of a red colour, analogous to the colour in acute inflammation; and several cases of this have occurred at La Charité. A dull milky white colour, very different from the natural white colour, Monsieur Andral thinks, ought also to be referred to chronick inflammation.

In all cases of long continued inflammation, we find, on examination, that the mucous coat has either become indurated or softened in its texture. Induration is one of the characteristick marks of chronick inflammation both in membranous and parenchymatous tissues. In the gastrick mucous tissue, it may be partial or general; it may exist, 1*st*, with the colour natural; 2*d*, or of a duller white than natural; 3*d*, with a greyish colour or a brown, more or less deep.

The most common alteration, however, is the softened state *. This exists in three principal degrees. 1*st*, The membrane, although it has lost its natural consistence, (no longer peeling off), and reducible to a pulp by the slightest scraping, still preserves its solid form before being scraped. 2*d*, In place of the mucous membrane, we find over a certain extent of the stomach only a sort of whitish, greyish, or reddish pulp, which might be readily mistaken for mucus lying on the cellular coat. 3*d*, This semifluid pulp has disappeared, and the cellular coat is found bare, either in some insulated points, or over a great extent. The softening is most common in the splenic portion of the stomach, while induration occurs most frequently in the pyloric. Is this softening the result of inflammation? Mr Andral answers in the affirmative. It is most usually accompanied with alterations indicative of inflammatory action; an uniform red colour either pervades the whole softened part, or the redness is disseminated in points, patches, or stars. The veins in the submucous cellular tissue are varicose and dilated, as they are where more or less inveterate inflammatory action has existed; all other tissues become softened by inflammation, cellular, serous, cutaneous, cartilaginous tissues, and parenchymatous, as the brain, lungs, liver. Sometimes the softened mucous coat is perfectly white, but we also find analogous cases in other textures, which may be unaltered in colour, although inflamed.

Let us examine the symptoms which have preceded. 1*st*, In many cases they manifestly indicate acute inflammation. 2*d*, The affection is also chronick, and then we have had shooting pains in the epigastrium, increased by food or drink, with vomiting more or less urgent. 3*d*, But we may find the softening of the mucous coat, where the symptoms were very obscure during life; thus the patient may have had no vomiting, no thirst, no fever, some appetite, and only complaining of digestion more or less painful, and they emaciate; but we may find the same obscure symptoms where the stomach is the seat of large and deep ulcerations, large fungoid tumours, &c. We must admit, then, that there may be gastric inflammation without decided symptoms, as there may exist pneumonia without the iron rust expectoration, and without dyspnea, &c. The causes which produce this softening belong to the class of irritating substances; in animals, the introduction of irritating matters produces softening of the mucous coat. I found the stomach very extensively softened in a child, to whom sulphuret of potash had been given to cure it of croup. From that period, three months before death, the child became affected with frequent vomiting, and was seized with marasmus. In spirit drinkers, the most frequent lesion is softening of the mucous coat. The gelatinous softening, so well described by Cruveilhier, occurred in children who had been weaned, and in some degree gorged with heavy and indigestible food.

Softening is sometimes found without our being able to trace any irritating cause; but if the symptoms be the same, and the anatomical characters the same, as those which develop themselves in consequence of a manifest irritating cause, are we not justified in concluding, that the first are of the same nature as the second? But softening of the brain and stomach present themselves in the very old and debilitated subjects, not apparently the most favourable to inflammation. Thanks, however, to the progress of pathological anatomy, we now know that inflammation may manifest itself equally in the young and old, the robust and feeble; only in these different conditions, the local inflammation announces itself by a very different train of general symptoms. Finally, the antiphlogistick plan of treatment is found to be most proper in cases of softening. With regard to thickness, the mucous membrane in chronick gastritis may present itself in three states; 1*st*, with its natural thickness; 2*d*, its thickness more or less increased; 3*d*, it may have become thinner than natural. Increase of thickness is very common in chronick inflammation of the mucous coat. It may exist either with the softening or induration of that membrane. In the first case, the mucous coat is tumefied, swelled, as if inflated by the fluids which flow into it. This state is more common in acute than chronick gastritis, though it may exist in the latter also. Induration of the mucous coat exists only in chronick gastritis, and is one of the least equivocal signs of it. Here there is a real increase of density, an hypertrophy of the mucous coat, a more active nutrition, in consequence of inflammation; on the contrary, if the mucous coat be softened, ulcerated, if its tissue be transformed into new tissues, we must admit not only an excess of activity in the nutrition, but also a modification or perversion of the laws presiding over the phenomena of nutrition. The thickening of the mucous coat, coinciding with induration or softening, may invade a great extent of surface, or lie exactly circumscribed to particular spots. From this latter state result exanthemata, vegetations, tumors, &c. &c. which present infinite variety with respect to form, texture, size, number and situation. It is usual to separate the description of these tumours from the history of chronick gastritis, as if a simple modification of form could establish a real difference between diseases similar in all other respects. With respect to texture or anatomical composition, these tumours, developed on the mucous membrane, and which seem to be merely a morbid extension of that membrane, may be divided into two classes. 1*st*, The tumours, vegetations, &c. whose texture represents exactly the texture of the mucous membrane. 2*d*, Those whose apparent texture seems to have no longer any analogy with the mucous membrane, whether healthy or diseased. The first are the most common; and if it be proved that induration and thickening are a result of inflammation, these same alterations ought to be referred to it when they are circumscribed, and with thickening considerable enough to constitute tumours.

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* Louis, Archives de Medecine, tom v.

Controversy can only exist with respect to the second class of tumours. Many of these are formed of a hard homogeneous tissue of a dull white, or of a soft whitish, or reddish tissue, resembling brain. Mr Andral is inclined to believe the encephaloid tumour of the mucous coat to be also a result of inflammation, though he does not pretend to say, that, in whatever texture the encephaloid tumour exists, inflammation has necessarily given rise to it. We do not possess sufficient data to establish this as a fact. The situation of tumours in the stomach is by no means a matter of indifference, as the symptoms are very different in a tumour occupying the cardiac or pyloric portions. Finally, the mucous coat may be thinner than natural, representing a sort of transparent web of extreme fineness; on trying to remove, it reduces to a pulp, as in certain degrees of softening. This is most frequent in the great curvature, where it has been remarked the softening is also most commonly found. Mr Andral has only twice seen it in the pyloric part. He regards this as one of the forms of softening, as it coincides with the anatomical signs and symptoms of chronic gastritis. In a woman, who had suffered from frequent vomiting during the last month of her life, patches of red were scattered over the stomach in the splenic portion; the mucous coat was softened, and so thin as scarcely to equal the thickness of the membrane of the maxillary sinus. Mr Andral also thinks, that a true atrophy or thinning of this membrane may take place unpreceded by inflammation.

Ulceration of the mucous coat is not so common in the stomach as towards the termination of the small intestine. In acute gastritis, if not resulting from the introduction of an acrid poison, ulceration is extremely rare, while in acute enteritis it is very common. In chronic gastritis we meet frequently with ulceration of the mucous coat, and then it is usually single and of greater or less diameter. Around it the mucous coat may either be healthy or diseased; it is the same with the cellular membrane, which forms the bottom of the ulcerated part. When this is formed by the cellular tissue in a state of considerable induration, and when, at the same time, the mucous surrounding the ulcerated part, is thickened, swelled, and fungus-like, and with numerous vessels distributed over it, and when at the bottom of the ulcer exist, under the form of vegetations, the remains, more or less extensive, of the inflamed mucous coat, it has been usual to denominate it cancer of the stomach, terminating in ulceration. If this expression is proper, I will discuss this point more in detail, after having treated of ulcerations of the other coats of the stomach."

Death from the Bite of an Adder. Rust's Mag. vol. xxi.

Upon the 26th of August 1824, the shepherd O. of the village of Radousk, in the government circle of Marienwerder, caught an adder in the forest, and coming with it to another shepherd, assured the latter that he could charm serpents, and thereupon allowed the animal to wind itself round his arm. In order to give still more decisive proof of his magical power, he took the serpent by the head, and thrust it into his mouth. At this moment the animal stung him in the tongue. The tongue immediately became swollen to that degree, that, before he could reach the village adjoining, he was no longer able to speak, and it would have been impossible to learn what had happened, if the other shepherd had not afforded the necessary information. The swelling of the tongue went on increasing, and at length forced it far out of the mouth; and in the course of two hours, the man became a victim of his own folly. The body passed with amazing rapidity into the state of putrefaction.

Case of Simulated Dumbness. Rust's Mag. vol. xxi. p. 565.

Dr Elfes, a district physician of the Circle of Dusseldorf, relates the following case. Upon the 8th of September 1825, the burgomaster Von B. gave information, "that, the day before, a farm-servant, named Matthias Heyer, who had lost his speech in the eighth year of his age by a fit of apoplexy, and remained dumb for two and thirty years, had, after suffering considerable pain under the tongue, and a fit of syncope, been restored to speech in the presence of his fellow servant Henry D.; that he on a sudden spoke, and asked D. if he did not see God standing before him, with a countenance as white as snow; who had answered him, that those who were beside him must read two masses, but that he himself must cause two to be read." Upon the 9th we set on foot a strict investigation respecting both these persons, of which the following was the result. Heyer said, that he was born at A., is about thirty-eight years old, and has no relations. In his 8th year, he lost his hearing and speech by apoplexy. The hearing upon the right side, however, had come back, at a time of which he had no distinct remembrance. Three years ago he had suppuration in the left ear, after which the hearing was restored. Upon the 6th September, he felt considerable pain under the tongue, which continued until the following day. Notwithstanding, he went out into the field with his comrade D., at seven in the morning, to mow clover, and the labour proceeded with unusual rapidity, as if they had been assisted by an invisible hand. After a fainting fit, he had his speech restored, through the help of the mother of God, by a white vision, the Holy Ghost, in the likeness of a dove. His fellow servant Henry D. related the circumstances of this metamorphosis in the following manner: About seven in the morning they went out to the field, and about half past eight Heyer uttered an unusually loud noise, with sighing, and signs, which indicated as if he were exhausted. "I went up to him, and advised him to take a rest. In a short time I heard another sound, like that of a person who would speak, but cannot. I saw Matthias working with his fingers in his mouth, as if he wished to remove some impediment by force. At last he fell down, became pale, fainted, then sprung suddenly up, sank down again, and cried out, 'D.! help me.' We both prayed, and Matthias said to me, 'Seest thou not that Jesus stands before me in a white robe?' He repeated this twice, although I saw nothing. Upon this Matthias fell into a faint once more, and upon recovering, said, that, by the direction of the vision, he was to cause two masses to be said." This person, Henry D., who had served with their common master for five years, and had slept with Heyer for the last three years, affirmed, that he had not, in that time, once heard a sound of the voice from Heyer; and D. was very distinct and accurate in his answers. Heyer avoided all questions that seemed captious, but particularly would say nothing conclusive as to his early connexions or former place of residence, except that, a short time before entering his present employment, he had also been in service at K. He refused to acknowledge that he had ever performed his service in the conscription. He spoke very fluently in the dialect of his native district. With respect to his personal appearance, his aspect was sickly; he complained of oppression at the pit of the stomach, prophesied his approaching death, and suffered frequent attacks of syncope. His landlord, the servants, neighbours, and the whole community, testified that Heyer had been dumb for about three years, and, even upon the most surprizing and unexpected incidents, had remained silent, as, for example, when a loaded sledge went over his foot, and another time when an axe fell upon his head; and that he was faithful, solitary, and thoughtful. The vicar gave testimony, that, for three years, Heyer had made confession by signs only. A closer inquiry was now made into this person by the direction of police, and it was finally discovered that this favourite of the mother of heaven was a worthless fellow, who had never been dumb; who, from the debauchery of his whole conduct, could not live with his wife, had often been in prison, &c.; and upon this information they put him under arrest. But the publick had now chosen to become a party in the case, and many persons were not wanting who saw nothing in Heyer but a persecuted man, and they hurried in crowds toward his prison, in order to embrace him. The enthusiasm for the man of wonder had already risen to its highest pitch, when he openly confessed every thing to the Judge of Instruction (Attorney General), and declared as his motive for an imposture, so long continued, and so well maintained, that he could in this way earn his bread with greater facility!

This case of aphony, simulated for almost four years with great art, remains still an object of much interest, in a forensic and psychological point of view.

Case of Death from preternaturally enlarged Thymus Gland. Rust's Mag. vol. xxi. p. 554.

The child of Mr Von H. was entirely healthy in the first months of his life, and grew rapidly. About the age of three months, the nurse remarked that, accompanied with a slight cough, the child would often, of a sudden, remain for an instant without breathing. But, in the first months, there often passed days and weeks before these symptoms were renewed, consequently they attracted but little attention. In the course of some months, however, they became more frequent and violent, and appeared at least once a-day. Of a sudden, the child would be thrown from the greatest cheerfulness into a fit of suffocation: the pulse was then scarcely to be felt, the face became more or less red, and the whole aspect indicated the greatest anxiety. Some seconds thereafter, a deep inspiration followed, with a sound very peculiar, as in hooping cough, and then the attack, for that time, was at an end, and the child returned to his natural cheerfulness. At the sixth month these attacks became so frequent, that they often appeared several times within an hour, not less during the calmest sleep at night, than during the day. The duration of these fits was extremely different; in general they only lasted for a few seconds, but some accessions continued so long as to threaten the existence of the infant. In one of these he actually expired, at the age of nine months.

The dissection exhibited the following appearances. Upon opening the cavity of the chest, the unusual magnitude of the thymus gland was the first thing which struck the eye. It extended to the extremity of the sternum, was 3½ inches long, 1½ inches broad, and weighed 7 drachms 54 grains. Its consistence was very firm, especially at the point where the arteria innominata passed under it, at which it was nearly as hard as cartilage, and appeared to compress the arteria innominata. The heart also possessed an unusual form; the left side was extremely muscular, the walls very thick and firm; the right side natural; the coronary vessels, particularly of the left side, were quite unusually thickened, and the foramen ovale perfectly shut. The inferior lobe of the left lung was of a solid consistence, like liver, the upper part of the lung natural; the liver of considerable size, and very firm; the stomach unusually small, with the fundus scarcely distinguishable, and its greatest breadth not exceeding 1½ inches. The result of this dissection throws much light upon the nature of the disease. From the pressure exerted upon the arteria innominata by the thymus gland, originated, from time to time, an obstruction of the circulation, and an increased determination of blood towards the head, through the left carotid, whence the frequent fits, the redness, the turgescence of the face, and finally death by apoplexy, must have ensued.

Note by the Editors.—Although we agree with Professor Rust, that, in this instructive case, death was the consequence of pressure upon the *arteria innominata*, yet we cannot allow that the undue pressure of the thymus gland destroyed life by a fit of apoplexy. It is a rare thing for apoplexy to extinguish life thus suddenly, and our author acknowledges, that respiration was, from the first, suspended during the operation of the pressure, the pulse was scarcely to be perceived, and it could only have been that same approach to syncope, which made the nurse or attendants apprehend instant death, during the fits. Moreover, we have several cases exactly parallel, where pressure upon the large vessels near the heart produced syncope, and at last sudden death. The case of *dysphagia lusoria*, so beautifully delineated by Dr Bayford (in the 2d volume of the Memoirs of the Medical Society of London, p. 271.), and which originated in a whimsical course taken by the right subclavian artery, between the trachea and esophagus, owed all its symptoms, and the final extinction of life, to the reflux of blood to the heart, while pressure was made upon the artery by the passage of food along the esophagus, or similar causes. That instant syncope also, the repeated supervention of which forced Mr Colles of Dublin repeatedly to relax the ligature which he had tightened around the subclavian artery, close to the innominata, in an operation for aneurism, affords another clear testimony to the same effect. But we need not multiply instances to shew that the present is only to be considered as an interesting example of death produced by obstructed circulation.

Peat Water-Baths.

At Muskau, a town upon the Neiss, in the circle of Gorlitz, is a large peat-moor, impregnated with iron, and therefore named the Iron Peat-Moor. The waters issuing from this iron peat-moor, have, for some time, been highly valued in Germany as a tonic, in the form of bath; and Dr L. Haxthausen has favoured the publick with an eulogy of them, amounting to 54 pages, in Rust's last magazine, which we feel no inclination to transcribe. As, however, we have abundance of peat-bogs impregnated with iron in our own dear Highlands, and amidst scenery to which the sorry moorlands of Germany can pretend no comparison; as, moreover, the last and best part of creation seems to derive health and delight from the peat-bog bath, we think we cannot do our readers better service, than by turning into English the following extract from the *lobspruch* of Dr Haxthausen:—

"Peat operates upon the human body, with a restoring, enlivening, and strengthening power. I have heard most persons immersed in the peat-bath complain at first of a not unpleasant sense of cold, but which constantly changed into a 'soft and delicate heat,' which, according to their description, appears to proceed from within; and, in usual cases, excited the sensibility. These sensations proceed from the spine, along the ribs, from the os sacrum, in distinctly sensible impressions, towards the legs. In some sick persons the heat commenced in the epigastric region. After this sense of heat has lasted some time in the skin, sensations of tickling, itching, and creeping succeed. A lady of quality, of great sensibility of system, who suffered from hysteria, became so excited by this feeling of heat arising in the hypogastrium, and the prickling sensation that immediately followed, that, during the whole use of the baths, she was in a continued fit of laughter, which she could not restrain; and sometimes carried this sensitiveness to a degree of exhaustion which produced fainting; so that her maid-servant called to me for assistance; and I always was fortunate enough to remove the effects of this incident, by the liberal affusion of cold water." P. 514.

These baths, of course, remove every disease, as if by a charm; and we would advise the retainers of the ancient diocese of Dunblane, who, unless our memory deceives us, enjoy the blessing of a peat-moss in the immediate vicinity of their mineral fountains, to erect a splendid establishment of peat-baths, for the attraction and cure of the sick and sorrowful.

Poisoning from Pepper. Rust's Mag. vol. xxi. p. 549.

Dr Jaegar, government physician of the circle of Dusseldorf, has lately reported, that, in that neighbourhood, a case of poisoning, though the result of accident, had made some noise. A person affected with intermittent fever, on the approach of the accession, had taken three or four half ounces of pepper mixed with a pint (chopin) of brandy. When the physician arrived, he found the patient lying upon the ground, pale as death, and struggling with the most terrible symptoms. He was almost totally deprived of sense, and agitated with frightful convulsions. When consciousness, at times, returned, he complained of severe pain in the gullet and stomach, had violent thirst, yet rejected every draught, by vomiting, almost as soon as it was given. As it could not in the least be doubted that violent inflammation of the stomach and esophagus prevailed in this case, the medical attendant employed the most active antiphlogistick means; and the patient was restored to his previous state of health in a few days.

Note by the Editors.—As we have no proof that this case ought not to be attributed to the brandy with as much reason as to the pepper, except perhaps the inflammation of the esophagus, it would be more accurate to consider the whole affection as the results of the joint operation of the pepper, the brandy, and the febrile reaction. Still we would be far from denying the possibility of deleterious effects from substancees so active as the *piperitæ*, some of which, as the *arum* and *capsicum*, are also co-related to other tribes well known to possess poisonous qualities.

An Account of the Pinta, or Blue Stain, a singular Cutaneous Disease prevailing in Mexico. By Samuel M'Clellan, M. D. (From the American Medical Review, vol. ii.)

From the information which I obtained from the most intelligent of the natives, I can only state, that the disease denominated by them the *pinta*, or blue stain, made its appearance in the neighbourhood of the volcano of Jorullo*, in the northern part of the province of Valladolid, shortly after its first eruption, and has gradually extended south, through the whole of the *Tierra Caliente*†, as far as the town of Mascala, on the road from Mexico to Aca-

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* The volcano of Jorullo, situated upon an estate of that name, broke out in 1775, from a level plain, and rose in one night to the height of between 3000 and 4000 feet. Arrowsmith has given it incorrectly in his Map, by attempting to spell it in English as it is pronounced by the Mexicans.

† The Tierra Caliente, a hot country, is divided by the *coast* (a narrow tract of land so called by the natives, extending along the Pacific, from two to six leagues in width), by the *Sierra Madre*, or Mother Mountains, a rough and broken chain, which, running parallel to the coast, is from thirty to seventy leagues across. This country lies between the Mother Mountains and the foot of the great Cordillera of Anahuac, and extends through the provinces of Valladolid and Mexico into that of Puebla. It varies in width from thirty to sixty miles. The surface is broken by numerous ridges of high hills, with the valleys lying around their bases, and communicating with each other, well watered by numerous rivers. The soil is very fine, admitting the cultivation of all the products of a tropical climate.

pulco, and I believe still farther south. It has generally prevailed among the lower class of people, who are of a dark colour; and is said to commence with slight rigors and nausea, followed by some degree of fever. These symptoms last only for a few days, when, on their subsiding, discoloured spots are discovered upon the face, breast, and limbs, of a light or yellowish appearance, which gradually change to a blue, and, in advanced stages, to a black, almost resembling the negro skin. In this stage the skin also has a rough and scaly appearance, and is somewhat inflamed, forming, when injured, either by accident or the stings of insects, deep and foul looking ulcers, with hardened, and, in some cases that I saw, inverted edges, which the people themselves consider incurable. The perspiration of these persons is peculiarly offensive, but I believe their general health is not much affected, at least I did not understand that they suffered more from other complaints than those who were free from it. There is at present in the city of Mexico a regiment of persons affected with this disease, denominated the Pinta Regiment, and officered by white men, who are appointed by government. A soldier's life, of course, subjects them to fatigue and privations, which, however, they appear to endure without more complaint or injury than others. They very generally, however, in common with all others who use the same diet *, are affected with dyspeptick complaints.

The disease is said to be infectious, and facts seem to corroborate the account. I have seen persons who were born and bred up in the higher districts, where it is not known except by report, after having lived for a few years in the low country in habits of intimacy with the people, return with the disease. Nurses who are affected with it, and have been employed in the high districts, have communicated it to the children; but these, when treated in the first stage by light cathartics, and some of the active diaphoretic plants, with which that country abounds, are said to have been cured.

There are many persons of the higher classes, however, who have resided nearly the whole of their lives among the Pintoes, and have even employed them occasionally as servants in their houses, without contracting it; but such have always enjoined the greatest cleanliness both upon themselves and servants, by repeated bathings, ablutions, &c. Others, who have not observed these precautions, have not been so fortunate; but among these I have not seen the disease so far advanced as among the lower classes. I do not recollect of having myself seen a single instance where the disease had been contracted out of the infected district, although these people are frequently met in almost all parts of the country west of the city of Mexico, passing and repassing with their produce and other articles for sale; nor is the disease known, otherwise than by name, on the Pacific coast, or in other adjacent tracts of country which are separated from the *Tierra Caliente* only by intervening ridges of mountains.

Whether this disease is ever communicated by propagation or not, is very difficult to determine. In all the families in which I witnessed it, the children were infected; but whether it was inherited, or communicated to them by contact, is quite uncertain. I have seen it in infants at the breast; others were said to have been free from it until a year or two of age. Such are always brought up, as they afterwards live, in extreme filth. It should be recollected also, that their diet is far from being delicious or wholesome.

It appears to me, that this disease cannot be identified with leprosy. If it be, however, it must certainly be considered as a remarkable variety, and of an uncommonly mild form. I regarded it merely as a cutaneous disease, as I saw it affecting no other part of the body. The people believe it to be distinct from leprosy, which disease is not unknown among them, since I was called to see two reputed cases of it at Rosario, near the district of the Pintoes. An elder brother of these two had previously been sent to the mountains by the alcades of the village, to prevent an extension of what they considered to be the genuine leprosy.

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* The lower classes of people in Mexico live chiefly on corn, cakes, and meat, cooked with lard and red pepper.

The physicians of the country, in whom, however, but little confidence is to be placed, regard the pinta as a specific disease, and as generally incurable. I never heard of even an attempt to cure it in the low country. It was at Temascaltepec, 5000 or 6000 feet above the level of the ocean, that it was said to have been cured in the cases of infants when taken from their nurses.

Experimental Researches on the influence exercised by Atmospherick Pressure upon the progression of the Blood in the Veins, upon that function called Absorption, and upon the Prevention and Cure of the Symptoms caused by the Bites of Rabid or Venomous Animals. Dedicated by permission to his Majesty. By DAVID BARRY, M. D. Knight of the Order of the Tower and Sword, Member of the Royal College of Physicians in London, first Surgeon to the Portuguese Army, Surgeon to the Forces, &c. &c. 8vo. Pp. 159. London 1826.

THE "Experimental Researches" upon venous circulation, absorption, and the influence of atmospherick pressure upon poisons, which have so laudably engaged the attention of Dr Barry and the publick for the last fifteen months, are here thrown into one volume. This we think is a judicious measure of the author; and he has not, by any means, abused the privilege of publication, by idly augmenting his book for writing's sake, his only addition being an appendix containing the original reports of Baron Cuvier, and Professors Dumeril and Laennec, to the Royal Institute of France, and to the Royal Academy of Medicine at Paris. (See our second Number, p. 215.)

The doctrine advanced by Dr Barry has the advantage of being entire; no mass of straggling propositions, each less certain than another, but consisting of naturally and obviously connected deductions, flowing from, yet composing, an aggregate of elegant rotundity of form, whatever may be the solidity of its support. In short, Dr Barry maintains,

1. That the moving force of the arterial blood, whatever it is, becomes extinct in the extreme arteries.
2. That the movement which the stream of blood still exhibits in the veins, is entirely owing to the sugescent power exerted by the right side of the heart.
3. This sugescent power is originated by the removal of atmospheric pressure, from the blood of that side of the heart, during the act of inspiration.
4. Absorption, whether from surfaces or elsewhere, takes place through the instrumentality of the veins.
5. These veins absorb newly presented fluids, entirely on the same principle as they impel their own blood towards the heart, namely, under the influence of atmospherick pressure.
6. By opposing suction to this atmospherick pressure, in other words, by opposing the suction of a cupping glass to the suction of the lungs, absorption may be arrested, for almost any length of time.
7. It follows from this, and is confirmed by Dr Barry's own observations, that the process of cupping, employed over poisoned wounds by the ancients, is the most certain and most effective means that can be devised; enabling the practitioner to suspend the effects of the poison for almost any proposed space of time.

It suits very well with Dr Barry's theory, that, whether it be performed by the arteries or veins, the effect of diminished atmospherick pressure must be the same, upon absorption. We shall not therefore linger upon that question.

Dr Barry proves the influence of diminished atmospherick pressure upon the motion of the blood in the veins, in the following manner; and, we imagine, this method affords a very fair measure of its effects. Into a large vein, such as the jugular, he introduces a tube, essentially connected with a quantity of coloured fluid, by means of a spiral glass tube. The animal inspires, and the coloured fluid is observed to ascend through the spiral turns of the tube upwards. When the animal, after the inspiration is finished, begins to expire, the coloured fluid is seen to stop, and at length even to descend, in the tube. The ascent has no doubt been produced by *the diminished pressure, which the lungs, by inspiration, have produced upon the blood ascending to the heart in the vein, with which that part of the fluid in the tube is in contact*; whilst the stoppage, and actual descent which it exhibits during expiration, is a proof of that same force being annihilated, and even of its effects being resisted, during the collapse of the lungs. Phenomena exactly similar take place when, instead of a vein, the tube is inserted into the cavity of the pleura or pericardium. Pp. 18, 19.

We believe no one, not even Dr Carson, has given so clear an explanation of this fact as Dr Barry. That influence of this kind is exerted upon venous blood, is an opinion as old as the doctrine of the circulation itself; but a *measure* of its actual effect, or a just account of the mode in which atmospherick pressure operates, was reserved for the invention and perseverance of Dr Barry. Haller, in one passage cited by our author, but which we cannot find, though darkly recollecting something similar, says, " ut pressio aeris pro nulla potest haberi,"—though his language is quite different in another place; vol. iii. p. 355. " Solus pulmo suum proprium habet motum, quo sanguinem promovet—potissimum in laxitate vasorum, quam inspiratio facit—machinam propriam habet, a qua vasa exporriguntur—pressio partium circumpositarum demitur," &c.; whilst a little before, (p. 245), he has shown demonstratively, that the whole of the effect of inspiration upon circulation must be to the effect of the right ventricle upon the same, in a ratio not greater than 136 to 48,000, or as 1 to 355! and, consequently, an effect too minute to deserve consideration, and only to be measured by the ingenious apparatus of Dr Barry. For no one in the least acquainted with physiology, will attempt to deny, that 40 cubic inches of air is a large measure for common inspiration; and also, 9 feet per second for the velocity with which that air rushes into the lungs. But 40 cubic inches of air weigh 15 grains, therefore $15 \times 9 = 135$, expresses the momentum of this air, and consequently the effect of the inspiratory act upon that fluid, or upon any other, as the blood of the veins in the pulmonary arteries with which it may happen to be in contact. Nor will it be denied, that 2 ounces of blood, at the rate of 50 feet in a second, is, on the other hand, far within the actual quantity and velocity of the blood sent from the right ventricle; hence 960 grains $\times\ 50 = 48{,}000$, is less than the true expression of the momentum which the blood receives from the right ventricle, and consequently than its *net* effect: wherefore, the effect of diminished atmospherick pressure, is to the impulse of the heart upon the pulmonary blood, in a less ratio than 135 to 48,000. Q. E. D.

This valuable calculation we have translated, for the double purpose of showing how unsettled were the notions of its illustrious author on this subject, and how strangely, after this simple and infallible computation, of the small quantity of influence exerted upon the motion of venous blood, by atmospheric pressure, scientifick men like Dr Carson, our author, and, it would seem, even the illustrious Cuvier, Dumeril, and Laennec, still persist in attributing the *whole* of an effect to respiration, of which it can, but at most, in the nature of things, produce $\frac{1}{355}$th part. Independently of the experiments of Haller, who saw the blood still continue to advance in the venous branches, after their great trunks had been secured by ligature; or of Magendie, who demonstrates, in the most positive manner (at pages 418 and 431, Transl. Phys.), that the motion of the venous blood is constantly regulated by the arterial blood, and the free communication of the latter with the heart; there are obvious considerations that overthrow at once any theory of venous circulation, *founded on suction alone*, and excite no small astonishment that such an opinion could ever have prevailed.

1. If we cut a vein quite across, it is evident that its connexion with this sugescent power exerted by the lungs is entirely interrupted, and that, if blood continue to flow from its distant extremity, it must now be urged on

towards the heart by some other cause. But blood does continue to flow from a vein thus divided, till the death or syncope of the animal; consequently, there is another cause for the motion of the blood in the veins than suction; and that cause Magendie (l. c.) has shewn to be the heart and arteries.

2. In the common operation for bleeding at the bend of the arm, the ligature we employ interrupts the connexion of the vein below it, with the sucking power of the lungs; and the more perfectly it does so, the sooner does the vein, *below the ligature*, become distended; thus yielding an example of an effect increased by the extinction of the cause! and yet this insulated vein, when punctured below the ligature, bleeds much more copiously than it would have done without it (this being the sole motive for its being applied), and would go on bleeding, to the death or syncope of the patient. Consequently there is another cause of this flow from the veins than suction, and that cause Haller and Magendie have shewn to be chiefly the impulse of the heart and arteries.

3. In the late experiments of Dr Williams, and in many accidental wounds of the chest, in the phenomena of asphyxia, and the length of time that man, and all animals, can live under water (consequently, independent of breathing), without the venous circulation being stopped, or even, for a good while, much impeded, we have instances of the blood being moved along the veins, almost in the ordinary way; and which must therefore have been propelled by some cause much more permanent than suction, and continuing to act after suction had ceased to exist.

4. The fetus in utero breathes not, nor exerts any sugescent effort upon its venous blood; yet that blood circulates with the utmost exactness and rapidity; nor, after the child begins to breathe, and to exert that small *quantum* of suction which we allow to respiration upon the venous blood in its circulation, is any portion of the apparatus employed for the circulation in the yet fetal veins, suddenly abolished or superseded; the essential parts remain for life, and a few supernumeraries only, that were known to be necessary merely for the connection of the child with the placenta and mother, are gradually and slowly obliterated. Can it be imagined, then, that these principal organs, the heart and arteries, become all at once unfit for executing that office of propelling venous blood, which they, and they alone, had performed so exactly for nine long months?

If any writer finds himself in a condition to overlook these knotty objections to this pneumatic theory, he will do little harm by embracing it in all its parts.

But Dr Barry's great merit lies in his having restored the use of the cupping glass, or suction, in poisons, and thereby furnished us with an easy means of arresting those direful effects which ensue from their introduction. The man who places facts of this kind upon the sure foundation, and with the undeniable evidence, that has been exhibited by Dr Barry, is a benefactor to the human race.

> "Sear, friend, swift grows all theory,
> But green for aye life's golden stem,"

says Göthe, and it is but a poor paraphrase to add, that long after Dr Barry's theory shall be forgot, the apparently humble prop, which he has here added to our feeble humanity, will supply his laurels with freshness and vitality. The following extract from our author's twenty-three experiments, will shew, better than many words, the efficacy of this practice. He has made no pretensions to originality, but quotes at length the passages from Celsus and Pliny which prove the high reputation enjoyed by the practice among the ancients; nor need we, with whose annals it is interwoven, in the history of our heroick Edwards, grubble among the dust of antiquity for more recent testimonies.

"*Nov.* 5. 1825.—M. Rousseau, junior, presented a very large viper, which had been particularly excited, to the bare breast of a young pigeon, three-quarters grown. The viper bit deeply and eagerly *once*. Both the little punctures made by the fangs were marked, each by a small bloody stain

The piston cupping-glass was applied forthwith. Two amber-coloured drops were now seen to issue from the little wounds already noticed, and were very soon followed by minute quantities of very dark-coloured blood. The glass was kept on fifteen minutes. The livid parts around the little punctures were now dissected out. A gangrenous phlyctena had already formed, containing a thin ichor. After the infected parts had been removed, the glass was again put on for ten minutes. Again the glass was removed, and a small portion of muscle, or rather of a livid vein running into the muscular flesh, was dissected out. Not the slightest symptom of poisoning appeared. The pigeon walked upright, and seemed in perfect health.

9th November.—The pigeon continued to enjoy good health, and was this day shown to M. Bousseau. The following is his note :—

" J'ai vu le pigeon que nous avons fait mordre le Samedi cinq de ce mois. Ce meme pigeon est très bien portant le neuf. Au Jardin du Roi, le 9 Novembre, 1825."

Fontana states, that amputation of the pigeon's leg *three or four seconds* after it has been bitten by a viper, saves the animal; but if the operation be delayed *one minute*, however high above the bite it may be performed, instead of saving the animal, it hastens its death.

Conclusions.—From these experiments, and from the uniformity of their results, we may consider the facts as proved :—

First, That neither sound nor wounded parts of the surface of a living animal can absorb when placed under a vacuum.

Second, That the application of a vacuum by means of a piston cupping-glass, placed over the points of contact of the absorbing surface, and the poison which is in the act of being absorbed, arrests or mitigates the symptoms caused by the poison. (Exp. No. 1.)

Third, That the application of a cupping-glass for half an hour, deprives the vessels of the part over which it had been applied, of their absorbing faculty during the hour or two immediately succeeding the removal of the glass. (Exp. No. 5.)

Fourth, That the pressure of the air forces into the vacuum, even through the skin, a portion of the matter introduced into the cellular tissue by injection ; that is, if the skin of the animal be not too dense, as in the dog." (Exps. 16, 20).

A Practical Treatise on Diabetes ; with Observations on the Tabes diuretica, or Urinary Consumption, especially as it occurs in Children, with an Appendix of Dissections and Cases, and a Postscript of Practical Directions, for examining the Urine in these Diseases. By ROBERT VENABLES, M. B. Physician to the Henley Dispensary, &c. Pp. 214. London, 1826.

DIABETES is a disease of which we see much in Scotland, but its occurrence is rare amongst children with us ; and in this respect Dr. Venables's valuable and modest little treatise has afforded us considerable information in the perusal. He has established the fact of its not unfrequent occurrence at that early age, in a manner that no longer leaves any room for doubt ; and in doing this, has established another interesting analogy between dyspepsia, calculus, and diabetes, which few practitioners were aware of. It is true, that Dr Underwood, in his popular work on the diseases of children, mentions both *polydipsia* and *diabetes infantilis ;* and adds, that Zuingerus, whom we have not time to consult, speaks of the former, though not by name, as a common disease among children ; merely referring to Morton, in his *phthisicologia*, for mention of diabetes as a rare disorder among children [*]; yet before the present publication of Dr Venables, there existed no distinctly detailed case of diabetes infantilis in any accessible publication with which we are acquainted. We must premise, however, that, of the eleven cases of infantile diabetes recorded by our author, one only, which we give below, exhibited what Dr Prout, in his last edition, considers the only infallible characteristic of diabetes, namely a saccharine state of the urine. As we have, however, witnessed at least one instance in our hospital here, run through all the fatal train of phenomena observed in the course of saccharine diabetes, which notwithstanding, gave no indications of the presence of sugar in the urine, or any of the fluids, we are unwilling to admit the diagnostic of that most ingenious and indefatigable person, as being absolute and invariable; and, consequently, to condemn Dr Venables for classing his cases of urinary consumption under the still universal appellation of diabetes.

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[*] See London Medical and Physical Journal. March, 1826.

"Case IV.—Ann Sandys, aged eight years, March 9. 1820, complains of great weakness, with headach, cough, dyspnea, and a variety of other symptoms which simulate a phthisical affection of the lungs. There was a great degree of emaciation, rather more than generally attends a consumptive case. The thirst was urgent, and the appetite voracious. There was fever, with a hard frequent pulse, the tongue furred, and the bowels constipated. The alvine discharges were unnatural in their appearances, being generally *dark coloured*, frequently approaching pitch in colour and consistence. The abdomen felt full, and was rather prominent. A pain was occasionally felt in the hypochondrium, but it was not a permanent pain; when present, there was a manifest fulness of the part.

The most remarkable symptom, however, was the discharge of urine, which by admeasurement, varied from six to eight pints in the twenty-four hours. The urine was sweetish to the taste, pale, and transparent; specific gravity from 1.033 to 1.035. There was considerable pain in the loins, and the patient could seldom sit up long without feeling great weakness and aching in the lumbar spine. When the region of the kidney was forcibly compressed, nausea was excited; and if the compression was continued, vomiting was induced. I received the following history:—

This child had been delicate from the period of its birth. About eighteen months ago, it was attacked with small-pox; and during the convalescence from this complaint, pertussis or hooping cough came on. About six months before the present date, the child was attacked with scarlatina, which was immediately followed by measles. The exanthemata run what might be called a wild course, no very urgent symptoms having appeared. But, upon the subsidence of the measles, the child was attacked with pulmonary symptoms and emaciation, which proceeded rapidly. A kind of hectic fever, with thirst and voracious appetite, set in; and under these circumstances I saw her.

As there was considerable fever, with a harsh dry state of skin and contracted pulse, I drew off blood, and applied leeches to the hypochondrium, where the pain was felt. The evacuation being discoloured, I prescribed calomel in small doses, with the view of exciting the liver. The calomel irritated very much, and seemed rather to increase the unnatural appearance of the fæces. I tried several preparations of mercury, as the grey oxide, the hydrargyrus cum creta, the acetate, &c.; but mercury, in every form, seemed to disagree. In this exigency I gave the extract of taraxacum, and the saturated solution of chlorine. These seemed to agree very well; and the evacuations assumed a more healthy colour and consistence under their use. But little effect, however, upon the urinary discharge was thus obtained. The diuresis still continued excessive. Leeches were now applied to the loins; and the phosphate of iron given in doses of three grains three times a-day. This dose was gradually increased. The phosphate, although it seemed to controul the urinary discharge, oppressed the stomach very much; and therefore a mustard cataplasm was applied to the epigastrium. By these means, the depressing effects were counteracted; but on the subsidence of the irritation externally, the depression was renewed internally. This inconvenience was remedied by the application of a cumin plaster, the sinapism being considered rather too severe a remedy.

The sweetness of the urine was gradually, but slowly, removed, under the continued use of the phosphate; and the discharge itself was considerably reduced in quantity. There was, however, a certain point beyond which the amendment could not be urged by these means. As there was severe lumbago, with a nauseating pain, felt on strong compression of the loins in the region of the kidneys, and a degree of hectic fever, with a harsh dry state of skin, antimonials, with an occasional warm salt-water bath, were directed. An issue was also inserted on each side of the spine, immediately over the tender part. These measures seemed to exert some controul over the symptoms; but the strength seemed to be much exhausted. The powers of the constitution were therefore supported by a cautious exhibition of bark, which was now less objectionable, as all the pulmonary symptoms had disappeared. The antimonial was therefore suspended, and the bark and phosphate of iron trusted to, while the bowels were kept free by the infusion of senna, with vinum ipecacuanhæ.

At the end of five months, I considered the patient so far convalescent, that the issues were allowed to heal up; and she went to the coast and bathed in the sea,* from whence she returned the following November perfectly well; nor during two years, in which I had an opportunity of frequent communication personally, was there the slightest tendency to relapse.

Remarks.—This case is interesting on several grounds. It appears to me, that the exciting causes of the different derangements which took place were the exanthemata. I know of no diseases more pernicious to the health of children than these. It has been remarked from the earliest records of medicine, that the sequelæ of these diseases are far more dangerous and fatal than the actual diseases themselves: Nor has this any relation to the severity of the exanthematous symptoms; for it often happens that an apparently very mild form produces a very severe and aggravated order of sequelæ. The lungs, brain, liver, spleen, eye, &c. are often severely attacked on the subsidence of measles and similar diseases; and in scrofulous habits, the most direful consequences frequently ensue. It often happens, that a child which has gone through these eruptive diseases, without any remarkably severe symptoms, before the convalescence has been completed, emaciates, without any obvious cause to which such an effect can be attributed. In such circumstances, it is advisable, at least, to examine into the health of the urinary functions; for hence, perhaps, may be discovered a cause of disease which often escapes more ordinary observation. The earlier this discovery is made, the more tractable we shall find the complaint. But as the sequelæ of eruptive fevers are apt speedily to terminate in organic derangements, it is evident we can have but little chance of benefiting a patient, if this state of things have been allowed to supervene. The functional disorders of other organs, as the brain, lungs, heart, skin, &c. are generally attended with effects too remarkable to escape even common observation; but the functions of the kidneys must be enquired into by the practitioner himself; or otherwise, if he be not deceived, he will not be fully informed in the minute and more important history of the case. In young patients, such symptoms excite no attention; and even in those of riper experience, they scarcely attract any notice, till they have attained to a considerable degree of severity."

When we consider the great vascularity of the infantile kidney, its immense magnitude being, at birth, to the whole body as 1 to 80, while in the adult it is only as 1 to 240, or a third part of the *relative weight;* and probably not more than a fourth part of the relative *size* of the infantile kidney, we may comprehend how easily these organs become incited to increased action, by causes that would not take effect at a later age; and why also, in that later age, when the cause has once been raised to the vehemency necessary to produce action, that cause, and frequently also its effects, are no longer within the influence of medicine. Hence we observe, that though most of his younger subjects escaped, Dr Venables obtained dissections of several of the adults.

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* Here she took powder of sarsaparilla, suspended or intermixed with the compound infusion of orange-peel, which improved the appetite, renovated the strength, and at the same time relaxed the skin.

But there is another peculiarity of the infantile kidney which must greatly promote the peculiarities of its morbid states. The cortical substance of the kidney is at that age a mere shell, or sack, embracing loosely the twelve conical papillae, or first ducts of the urine; but the secretion, it is known, is operated in the cortical substance *only*;* and when that substance is loose, and almost a plexus of anastomosing bloodvessels in immense numbers, and suddenly dividing in the immediate vicinity of the aorta, without that density of parenchyma which might resist any irregularity or excess in the flow of blood into them, it is next to impossible, but that the kidneys of that early age must enjoy a higher sensibility than afterwards, and also be more obnoxious to morbid activity of secretion from slight causes. It is clear likewise, that whether the *first* moving cause of the diabetes of children exists in the kidney, as our author supposes, or somewhere else, that an organ of the high sensibility with which it is then endowed, must generally exhibit signs of irritability, if the increased and morbid secretion has been long transmitted through it. Dr Venables's cases give manifest indications of this fact: and the frequency with which all children pass urine, seems an argument to the same effect.

Dr Venables has been fortunate in the number of cases of diabetes which fell under his observation. Dr Prout, the fame of whose skill in uroscopy fills the hemisphere, relates in his last edition, (p. 81,) that he has only seen 20 cases within the four years preceding, in London. The late Dr Gregory informed us, that, even in Edinburgh, so famed for diabetes, he had only treated 50 patients in 48 years, not one of which finally recovered: And the medical Nestor, Heberden, after almost a century of unbounded practice in London, could only boast of having seen 20 cases. (Comm. p. 126).

The title page of our author will shew, that he relies chiefly on bleeding and the phosphate of iron as a cure. The former he prescribes on the same principle as Dr Watt, because he has generally found the lumbar region in a state of irritation during life, and the kidneys exhibiting marks of inflammation, upon dissection after death, (p. 18, 97); and especially (p. 58,) because he has found his theoretical views, in this respect, confirmed by experience. On the same principle, "blisters are to be applied as near the region of the plethoric organ as they can be placed." A sinapism, he thinks, may be advantageously substituted for plaster of cantharides. Caustic issues in the region of the loins may be useful in disorganization of the kidney, severe disease of the lumbar spinal marrow, or where it is wished to keep up the discharge. Phosphate of iron is readily formed by our author. Solutions of sulphate of iron and phosphate of soda are mixed; double decomposition takes place, and the phosphate of iron is left on the filter, in the form of a *blue* powder, insoluble in water, and which does not lose its colour in the atmosphere. He prescribes it "in doses of one or two grains, which may be gradually increased to a scruple, or half a drachm, three or four times a-day." In children, small doses should be given. Our author finds, (p. 70), 1*st*, That the phosphates, in general, exercise a powerful action on the kidney. 2*d*, That the saline phosphates have the tendency of running off by the bowels. 3*d*, That the metallic phosphates being naturally astringent, must tend to confine their action as phosphates, to the kidney alone; and on making experiment, (ibid.) "he has really been struck with the efficacy of the phosphate of iron in excessive discharge of urine. The quantity is rapidly reduced under the use of this salt; and, indeed, its qualities sensibly altered. The bulimia, which also attends on diabetes, is reduced, and the power of digestion invigorated and increased."

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[*] "Although the vessels follow the divisions of the medullary substance, (at the base of the papillæ), yet they never spread themselves in its internal substance; but are distributed almost exclusively upon the cortical matter; first in the segments situated between the papillæ; and, lastly, in the external layer of the kidneys." Mekel. Anat. vol. iii. p. 559.

This remedy seems well worth a trial on such recommendation. On the whole, Dr Venables has written a respectable tract on a subject comparatively new; and though some hints of his phosphate of iron *might* have been derived from Dr Latham's book, our author protests that he had not seen it. He testifies considerable impatience under the rod of our able contemporary, the Medical and Physical Journal, which perhaps he would have been wiser to suppress. It is most improbable that any injustice could be intended, and the majesty of his title page is in itself enough to ensure disappointment, and its inseparable consequence, to those who are officially bound to peruse his volume. He seems, however, a rational industrious man, and we scruple not to assert, that his labours, in the present case, are entitled both to indulgence and praise.

II. SURGERY.

Prof. Vacca Berlinghieri on *Trichiasis.*

The operation advised by the learned Professor, is performed by means of a small sabre-shaped knife, and an instrument, which he calls a *spoon*, very similar to the silver instrument commonly used for steadying the eye in operations. The directions are as follows:—

"The patient being properly placed in a chair, the face turned towards the light, an assistant places himself behind the patient, his breast presenting a firm rest for the head of the person operated on, as in the operation for cataract. The operator, placed immediately in front of his patient, either standing or sitting, as may be most convenient to him, raises up the eyelid, and ascertains the number of hairs that are inverted, and the extent which they occupy. Having done this, he traces with pen and ink a line upon the integument covering the eyelid, parallel to its free margin, and a quarter of a line distant from it; and this line is to be extended in length, so as to show with precision, upon the surface of the lid, the space which the misdirected lashes occupy on the internal surface. He then introduces the spoon between the palpebrae and the globe of the eye, in such a manner that the free margin of the former is placed in the groove which is situated on the convex surface of the instrument. He then draws this from the globe of the eye as much as possible, to prevent it from being irritated, and to extend the palpebra more thoroughly. Having done this, he confides the spoon to an assistant, who, with his right hand, if the eye operated upon is the right eye (if not with his left), draws, distends, and fixes the palpebra upon the spoon, by means of the index and middle placed upon the angles of the eyelid, so as to leave the part to be operated upon exposed and free. With the other hand passed under the patient's chin, he holds the handle of the spoon, taking care to maintain it in the position in which it was delivered to him by the operator. Things being so disposed, the surgeon makes, with the knife above delineated, two small vertical incisions, which are to commence a line and a half above the free margin, and are to terminate precisely at that point. These two parallel incisions include exactly that space which is marked out by the inked line, and are only to include integument. The lateral incisions being finished, a third transverse one is to be made beneath the line marked upon the palpebra, and parallel to it. This is to unite the two lateral incisions, and is also to include the skin only. A flap being thus formed, it is to be turned back, taking hold of it either with the forceps or between the nails, and dissecting it with the knife from the parts beneath. The flap being turned back, the bulbs present themselves; but it is not always easy to perceive them clearly, and to remove them, because not only does the blood contribute to conceal them, but the fixed cellular membrane that surrounds them does not render it very easy to lay hold of them. On this account, the surgeon must clean the wound thoroughly from the blood, and be provided with a very fine and excellent pair of pincers; and with these, and the knife or with a small pair of forceps, take away all that are found between the inverted skin and the external surface of the free margin of the eyelid. This being done, the operation is finished; and the surgeon reapplying the flap of the integument to its natural position, keeps it easily in its situation by means of adhesive plaster, without the necessity of any other dressing.

"It is necessary to observe, that, if the inverted lashes are at a distance from one another, and in the interval between them, there are many of the hairs having a natural and proper direction, it will be advisable to destroy the bulbs of the former, without disturbing those of the latter. It is not necessary to discuss the modifications which this operation requires, when performed upon the lower eyelid. The experienced surgeon can readily adapt his means to the different circumstances of the two cases."

"*Case of Trichiasis.*—Leopold Storzi of Pisa, thirty-five years of age, of a good constitution, was attacked, in the year 1814, with a violently acute ophthalmia, which terminated in an abscess in the globe of the right eye, and in chronic ophthalmia of the left, which at length produced the inversion of the cartilage of the upper eyelid, and consequently of the lashes implanted in it. In 1823, this man presented himself at the hospital. The common operation of trichiasis was performed, and, for a time, the cure appeared to be complete. Some months afterwards, however, the chronic ophthalmia appeared, and the man returned to consult Professor Vacca, who found that the cartilage maintained its proper direction, but that three hairs, rather longer and larger than ordinary, having abandoned the natural position, rubbed against the eye. The patient would not at that time submit to an operation, but preferred the extirpation of the hairs, which was repeated from time to time; and he did not come back to the hospital till the 24th of April 1825, the eye then being in a high state of inflammation, attended with an obvious opacity of the cornea. M. Vacca now persuaded the patient to submit to his new operation; and having laid bare the bulbs, he destroyed them by means of the nitric acid. He rendered the operation both extremely short and easy; but it was not less painful. The pain, however, soon yielded, and a very trifling degree of inflammation and suppuration succeeded. On the fifth day, the hairs not having fallen off, and continuing to produce great inconvenience to the patient, the Professor extirpated them; the irritation of the eye then disappeared. On the sixth day, the little wound resulting from the operation was healed, and the hairs which, after common extirpation, were usually renewed at the end of eight or ten days, had not shewn themselves at the end of two months; but a small depression was, as usual, observed in the situation of the bulbs that had been destroyed. The complete deprivation of the hairs from that portion of the palpebral margin, which suffered from the action of the caustic, must also be noted. For forty days all the lashes remained in their proper situation, and every one was surprised that the operator had been so fortunate as only to destroy the bulbs of the inverted hairs; but at that epoch, they began to fall off one after the other, and the surprise ceased."

A Case of Popliteal Aneurism, in which the Femoral Artery was found to be divided into two Trunks, which again became reunited where the vessel passes through the Tendon of the Triceps Muscle. Treated at the Middlesex Hospital by Mr C. Bell.

February 18. 1826.—Adams, a large and muscular negro, was admitted into the Middlesex Hospital, having a pulsating tumour situated at the upper part of the calf of his left leg, just below the knee-joint. He did not know his age, but he seemed to be between forty and forty-five. He first perceived the tumour four years ago; it was then small, and not attended with pain or inconvenience. About a month ago, the swelling suddenly became larger, and he experienced great numbness in the leg and foot.

The situation of the tumour is unusual, being not properly in the popliteal cavity, but further down. It is more superficial than a common popliteal aneurism, and rises out between the heads of the gastrocnemius *. The artery at the groin is very large, and easily felt. On compressing it, the pulsation of the tumour can be stopped; but the pulsation cannot be stopped by pressing on the middle of the thigh. For these reasons, Mr Bell stated that he should tie the artery lower in the thigh than usual.

Operation.—On Monday, 20th February, the operation was performed. It was attended with no unusual circumstances. The artery was easily found by lifting the edge of the sartorius muscle; and neither the vein nor nerve were exposed. After the ligature was applied, the pulsation of the artery against it was distinctly observed by all who were near the patient. As an arterial branch arose from the trunk close above the ligature, it was purposely cut across. It threw out its blood with great force, and was secured †.

The moment after the artery was tied, Mr Shaw, who had his hand on the tumour, said that the pulsation was stopped; and on asking the patient what he felt, he immediately answered, "There is no more painful beating." But Mr Shaw, keeping his hand on the tumour, felt the pulsation distinctly return in a few seconds, and so distinct were the pulsations, that he remarked it to Mr Bell; who, after putting his hand upon the tumour, and observing that the ligature was moved by the regular pulsation of the artery, replied, "Well, be it what it may, I shall do no more: we have done all we ought to do." The edges of the wound were brought together with short adhesive straps, and the patient was carried to bed. On examining the tumour half an hour afterwards, the pulsation was nearly as distinct as before the operation, and quite different from that *thrill*, or slight pulsation, which is so frequently found after this operation.

23d.—The pulsation of the tumour stopped this morning, the third after the operation. Hitherto the patient had not suffered in consequence of the operation, but he is now ill and feverish; he has a cough, and complains of pains through the body: the wound is not uniting kindly. A very remarkable impression seems to have been made on his constitution, and this at the very time of the pulsation of the tumour stopping.

24th.—He is very ill. The short cough, which he has had for some time, is much worse. He has pain, but whether in his stomach or chest, cannot be exactly determined from the indistinctness of his account of it. Six ounces of blood have been taken from his arm; and he is ordered to have an opiate linctus, to relieve his cough.

26.—Gradually sunk, and died this morning. The whole line of the sartorius muscle had become swollen and tender; and a serous effusion distilled from the wound.

During the progress of this case, no thermometrical observation was made on the heat of the limb, which throughout felt hotter than the other. It was obvious that the circulation through it was completely restored.

Dissection.—The sartorius muscle, from end to end, was affected with inflammation, of an erysipelatous character, which had spread along the whole course of its sheath. The muscle itself was swollen, and tumid with serous effusion.

Just below the part where the profunda was given off, the femoral artery was divided into two nearly equal branches. These ran down parallel to each other, to the part where the artery passes through the tendon of the triceps muscle; here they reunited. The ligature was found on the more superficial artery a little above this reunion.

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* In the figure, it may be seen, that the popliteal artery is enlarged above the proper aneurism. The point where it began to be dilated was opposite to the usual place for popliteal aneurism to form. This was ascertained on removing the parts from the body.

† Mr Bell, in his clinical report on this subject stated, that when we could discern a branch coming off in this manner, we ought either to apply the ligature upon the main artery above the branch, or to take up the branch separately; for if the blood be permitted to take its course through that branch, the coagulum is prevented from forming to any extent, and therefore the ligature upon the main artery becomes insecure.

At his next clinical lecture Mr Bell made the following remarks: There was no delay nor difficulty during the operation; the sartorius was lifted up, the fascia covering the artery opened, and the sheath of the artery dissected by scratching with the point of the knife, and carrying the back of the knife forward. If this had not been done with precision, we see that very awkward circumstances might have occurred, by cutting the deeper artery at the point of reunion.

The surprise is now, not that the tumour should have continued to beat, but how it should have ceased to beat by a ligature being put only on one of the arteries, either of which was fully sufficient for the circulation of the limb.

It was Mr Bell's opinion, that the unfavourable termination in this case arose, not from the constitution sympathising with the condition of the tumour, but in consequence of the very peculiar condition of the sartorius muscle, and the fever which it produced; and that, to the weakness of the circulation thence arising, the coagulation of the blood in the aneurism, and consequent stopping of its pulsation, were to be attributed.

This case was brought forward by Mr Bell in his lecture before the College of Surgeons on Tuesday 9th May, in illustration of the pathology of aneurism. He stated, that, in the operation, the effect of a ligature applied on the main artery is not, as is generally supposed, to prevent the blood from flowing through the sack. For the circulation through the collateral vessels is so free and so immediate after the ligature has been applied, that the blood flows freely into that part of the vessel which is below the point tied, and also through the aneurismal sack. This position he illustrated by several cases; and he referred to the one we have just related, as a striking instance that it is not necessary to obstruct the passage of the blood altogether, in order to procure coagulation in the tumour. In this case, tying only one of two branches of equal size, both which supplied the aneurism (that is to say, having cut off merely one-half of the blood passing through the tumour), was sufficient, in process of time, to allow a clot to form in the sack. The effect of our common operation, of tying the artery at a considerable distance from the seat of the disease, seems therefore to be merely to diminish the impetus of the stream of blood, by obliging it to pass by a circuitous route; and the consequence of this charge is, to allow the blood in the aneurismal tumour to coagulate slowly, and finally to obliterate the passage through it.

Explanation of the Figures 3 and 4 of Plate III.

Fig. 3. is a plan of the preparation.

a marks the profunda.
b the superficial branch, which was tied with a ligature.
c the deeper branch.
d is placed opposite the point of reunion of the two arteries.
e the popliteal artery.
f the proper aneurismal tumour.
g the division into anterior and posterior tibial arteries.

The deeper branch *c*, *d*, is seen to be perfect, except that its diameter is a little diminished opposite to where the ligature was applied upon the superficial branch.

Sections of the popliteal artery *f*, and the aneurism *g*, were made to shew that they were filled with firmly coagulated blood. The external layers of coagulum were firmest, while those near the centre were comparatively soft. The coagulum extended into the tibial arteries, to the extent of about an inch below the tumour.

Case of Wound Penetrating the Trachea, succeeded by interrupted Pulsation of the Arteries, in the Left Arm. Drawn up under the inspection of M. le Docteur Veillet, Chief Surgeon of the Military Hospital of Nancy, by M. Levret.

On the 2d of July 1821, Alexandre, aged 23 years, was wounded at the middle and inferior part of the neck, by the point of a bayonet, which penetrated to the trachea. The wound of the skin, which was not more than three lines in length, gave at first passage to the air; but, in the following morning, having lost its pulsation with that of the trachea, the left side of the chest became emphysematous and cold; as also the arm of the same side, in the arteries of which no pulsation could be recognized. Respiration was very difficult, and the pulse of the right side contracted.

Blood from the arm.

The third day sleeplessness, which was considerable, is diminished; the left side of the chest is not dilated; there is no other motion than that which is received from the respiration of the opposite side; if the ear or the stethoscope be applied, there are heard at the root of the lungs alone some slight and rapid inspirations. The chest is sonorous in all its extent, perhaps somewhat more upon the left side than upon the right.

The bleeding was repeated.

The fourth day sleeplessness, anxiety, tongue white, moist; thirst. The left side of the chest pained; the right pulse is hard and contracted. Emollient cataplasm, and diet.

The fifth day, slight remission. The coldness of the parts affected decreases; the left brachial artery presents some pulsations. The patient feels a disagreeable creeping sensation at the extremity of the fingers of that side.

Sixth day, headache; violent delirium during the night. On the morning, the pulsations of the heart are weak, hurried, sensible only to the ear and stethoscope. The pulse on the right side small, quick, and contracted; the left pulse is alternately insensible and vibrating; urine abundant, depositing a brick coloured sediment.

Seventh day. The delirium is renewed; the difficulty of breathing continues; an acute pain is felt in the left hypochondriack and lumbar regions, extending to the umbilicus; face discoloured, depressed, dispirited; right pulse contracted, left imperceptible; tongue dry and red. Evening remissions; the patient can lie on the left side; the heat is renewed; respiration freer; pulsation of the artery of the left arm has returned.

Eighth day. Watchfulness, without delirium; sleeping only possible upon the left side; pain of the abdomen persistent; right pulse at the wrist frequent, hard, developed; left pulse frequent and small.

Ninth and tenth days. No manifest change.

Eleventh day. Respiration sensible in the whole left side of the chest.

Twelfth and thirteenth days. Respiration freer, pain less; the right pulse always frequent and hard; left less developed.

Fourteenth day. Improvement of all the symptoms; the patient can lie as he pleases; the stools are abundant; the urine deposits a sediment.

Fifteenth day. Pain of left hypochondrium increased; little cough; emphysema has entirely disappeared.

Sixteenth day. Exacerbation; tongue white dry; pulse small and frequent on both sides; cough painful. Jallap. The emollient cataplasm and diet are continued.

Twenty-first day. Pulse still a little frequent; pain and cough diminished; sweats are abundant during the night. Slight aliments allowed.

The symptoms diminished progressively; and the twenty-eighth day after his wound, Alexandre was completely cured.

The above case, singularly remarkable with regard to the changes which supervened in the circulation of the left superior extremity, and in the respiration of that side of the chest, offers more than one problem for resolution.

What could have been the connection between a wound in the trachea, an inch above the sternum, and the pulsations of the artery of the left arm? What was the cause that interrupted the circulation in the lung? I confess that the more I seek to explain those remarkable phenomena, the more do I feel the impossibility of being satisfied. If there had been any contusion; if the patient had been struck, bruised, or the like, a probable conjecture, at least, might have been formed; the injury of some nervous trunk might have been supposed; or the formation of clots in the left axillary and pulmonary arteries: but there was nothing, absolutely nothing, besides the wound which I have described, and the very slight emphysema, which followed as its consequence.

III. ANATOMY.

Memoir on the Lymphatic Vessels of Birds, and on the manner of preparing them.

By M. E. A. Leurth, D. M. Read at a sitting of the Royal Academy of Sciences, 16th August 1824. Continued from last Number.

The lymphatics of the foot form branches by their reunion, which are found on the lateral parts of each toe. In the palmipedes, anastomosing lymphatics proceed from the collateral branch of one toe to that of the neighbouring one, forming arches more or less numerous on the web. These branches proceed to the anterior part of the metatarsal articulation, to form there a small plexus, from which three or four branches go out, some anterior and internal, accompanying the bloodvessels surrounding them like a net; others, posterior and external, receive the lymphatics from the sole of the foot, then mounting along the tarsus, and about its articulation, forming a plexus with very close meshes, of which some branches can be filled with mercury, even to the external cutaneous surface. All these vessels mount up the limb, surrounding it with a plexus even to its middle, where they reunite into two branches, of which the smallest one mounts along the external anterior face, into the groove formed by the union of the tibia and fibula, as far as the superior part of these bones, when, in passing through the intervening space, it unites behind with the other branch mounting and adhering to the bloodvessels. In proportion as the trunk which results from the union of these two branches, advances along the vessels of the thigh, uniting and separating, it receives the small muscular branches from this part, and a tolerable large branch, which accompanies the deep femoral vessels.

The trunk afterwards enters into the pelvis, by passing under the crural arch, receives several branches from the lateral parts of the pelvis, and divides into two branches, an inferior and superior.

The first receives some lymphatics from the superior lobes of the kidneys, those of the ovaries or testicles, and communicates superiorly with the branches which surround the superior mesenteric artery; inferiorly, with a plexus which surrounds the aorta and its branches, and which receives two lymphatics from the renal plexus, and accompanying the middle sacral artery. The superior branch resulting from the division of the lymphatic trunk of the thigh rises over the aorta, and forms there a plexus with the branch of the opposite side, and with the lymphatics from the intestines. These lacteals* accompany the branches of the superior mesenteric artery, where we saw, instead of an artery, several lymphatics frequently anastomos-

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* Very recently, that is to say since the last *experiments* I have made on this subject, several questions have been started relative to the chyliferous system in birds, to which I think I ought to answer.

ing among themselves, and surrounding it like a net. Before arriving at the aorta, these vessels communicate with the inferior branch of those of the thigh, ovaries and testicles; after which they spread over the aorta, where they receive the lymphatics from the pancreas and duodenum, and finish by uniting themselves over a celiac trunk to those of the liver, ventriculous succenturealus, gizzard and spleen, forming a rich plexus, where are occasionally seen lymphatic vessels emptying themselves into the neighbouring veins.

Finally, we find on the kidneys, a considerable plexus of lymphatics, some arising from these viscera themselves, and others from the rectum, muscles, and skin, which cover the sacrum and coccyx. Several branches go out from this plexus, which accompany the inferior mesenteric artery, receive the lymphatics from the rectum, cecum, and its appendages, and finally unite with the plexus of vessels which surround the superior mesenteric artery. Two other branches go out from the renal plexus, accompany the middle sacral artery, and blend with the plexus surrounding the aorta. The most numerous and longest branches which compose the renal plexus, open directly into the renal and sacral veins, which is particularly observable at the time of injection.

The aortic plexus, which is formed by all the lymphatics which we have just described, gives origin to two thoracic ducts of a very variable character, but frequently more than a line in diameter at their origin, situated behind the esophagus, and in front of the aorta. They proceed upwards and outwards, separating the one from the other, ascend on the lungs, receive some branches from these viscera and the esophagus, and each terminate by several orifices in the jugular vein of its own side, after being united to the lymphatics of the wings. The left thoracic duct, before terminating in the ju-

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1st, The absorbents that we see on the mesentery of birds, do they belong to the mesentery alone, are they only a portion of the general lymphatic system, or do they belong to the intestines likewise?

I have followed these vessels with the naked eye even on the coats of the intestines, where I very distinctly ascertained the distribution. I have been able to assure myself from those of man, that they are larger on the intestine, and that they diminish a good deal in diameter on entering the mesentery. From the small resistance of the parietes, I was not enabled to inject them on the coats of the intestines; but in injecting them on the mesentery, the mercury in its retrograde course filled several branches even to the concave margin of the intestine, and it was easy as long as the piece was fresh, to convince one's self that these injected vessels were continuous with those spread over the intestine.

2d, Are these vessels true lacteals, supposing we should find them on the intestines, and are they not too minute, and too few, to be able to absorb the chyle, considering the rapidity of digestion in birds?

In calling these vessels lacteals, I grant that a false idea is given of them, because they convey transparent chyle; but as the word lacteal is misapplied, even in the animals where these vessels contain white chyle, because the milk and the chyle are very different, and as that does not prevent its being made use of, I have thought proper to employ it also, especially after having previously spoken of the transparency of the chyle in birds. The identity of structure of the lacteals, and of the other lymphatics, the intimate connection of these two vascular systems, prove, that these vessels are the same; and if these lacteals are the only lymphatics which elaborate the chyle, they must be the only ones which can operate on the chyme, for without chyme there can be no chyle. In consequence, if we can place the orifices of the other lymphatics in a condition as favourable, as are the orifices of the lacteals in the *villosities* of the intestines, and as we can submit the chyme to their action conveniently prepared by the stomach and duodenum, these lymphatics would become true *lacteals*. If physiologists have not succeeded in nourishing animals by other ways than the *digestive* canal, it is because they cannot apply the substances to be absorbed to such an extended surface as the intestinal canal, and provided with such a thin epidermis, and being persuaded that chyle and milk are identical, they have most frequently employed the latter in their experiments. The lacteals are then nothing more than the lymphatics of the intestines. These vessels are as numerous in birds as in the mammalia, because they form a net-work around the bloodvessels; and at their roots, where we only see one lacteal accompanying the artery and vein, we find a compensation in the proportional size of the lacteal, which has then a caliber almost equal to that of the artery when it spreads on the mesentery, and which greatly surpasses it in diameter on the intestine. It is certain, that digestion takes place very rapidly in birds; but as the circulation of the blood is also proportionally rapid, it is probable that absorption is so also, especially if we consider that rapid digestion, and rapid absorption, of the chyle are nearly synonymous.

3d, Do the lymphatics of the mesentery exist in any other birds than the goose and swan?

I shall answer this question in the affirmative, at least as far as concerns the turkey, hen and duck, where I very distinctly saw the lacteals accompanying the vessels of the mesentery; but it was impossible for me to introduce a tube into them, no doubt because it was not fine enough; in the mean time this is not a sufficient reason for doubting it. Besides, I could not be deceived as to the nature of the vessels which I saw; the mesentery was without fat at this place, the bloodvessels were seen filled, with blood beside them, and the nervous filaments could easily be recognised by their greater opacity.

gular vein, receives the trunk of thĕ lymphatics of the neck of the same side; that of the right only receiving one branch.

The lymphatics of the wings follow the course of the brachial artery, forming a plexus around it, especially towards the humero-cubital articulation. Their principal trunk, to which about the superior third of the humerus, all the collateral branches join themselves, is even, at this place, very large: but its diameter soon diminishes, and at the superior part of the arm it has only a very moderate caliber. Arrived at the parietes of the thorax, it receives two or three branches which arise from the pectoral muscles, and another branch which accompanies the brachial plexus. Sometimes shortly after this trunk forms a small lymphatic gland, and finally unites with the thoracic duct of the same side.

The lymphatics of the head accompany the divisions of the jugular vein, as may be easily seen among the branches about the lower jaw, where these vessels are very frequently varicose. We shall not here consider the observation of the brothers Wenzel[*], who are said to have discovered the lymphatics of the brain in crows, by means of mercury introduced into the cavity of the cranium, and absorbed by these vessels. *Analogy* is sufficient to cause us to doubt the absorption of mercury in the fluid state, and repeated unsuccessful experiments has confirmed what was *a priori* advanced. The lymphatics of the head unite with those of the neck, forming two branches on the right and left, accompanying the jugular vein[†], one situated on its external the other on its internal side. These vessels communicate with each other by transverse or oblique branches at the superior and inferior part of the neck. They receive, in their course, muscular and other branches arising from certain glands which may be seen under the skin of the neck. A considerable lymphatic, arising from the esophagus, unites itself with the internal branch of the left side. Towards the inferior part of the neck, these vessels receive a remarkable branch, which accompanies the carotid arteries, and almost forms the lymphatic gland on both sides, which is situated on the jugular vein. Sometimes this gland is formed by a trunk arising from the union of the external and internal branches; at other times solely by the internal branch, and in this case the vessel going out of it soon unites with the external branch of the lymphatics of the neck, which continues its course by the side of the jugular vein, and ordinarily the common trunk is smaller than each of the branches which gave origin to it.

(To be concluded in our next.)

Placental Nerves.

We gave in a late number some account of the discovery of these nerves, announced by Sir Everard Home, without any particular remarks, because it appeared to be a subject which must necessarily be confirmed or rejected by future observation; the following notice we extract from the Journal Universel des Sciences Medicales, April 1826.

"In his Synoptical Table of the Trisplanchnic Nerves, printed above twenty years ago, Mr Chaussier says expressly, that filaments of the hepatic plexus apply themselves to the umbilical veins, accompany them into the cord, and thus arrived at the placenta. Besides this assertion, so clear and so positive, Mr Chaussier has several times in his lectures made public demonstration of these nerves; and they have been mentioned in several of the theses maintained before the Faculty of Medicine."

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[*] I have constantly observed that the left jugular vein is much less than the right: I have thought proper to mention this as I have not found it remarked in any works on comparative anatomy that I have seen.

[†] Bemerkungen uber aie Hrnwassersucht, Tubing. 1806, p. 14. dans la note.

On the Nervous Circle which connects the Voluntary Muscles with the Brain. By CHARLES BELL, Esq. (From the Philosophical Transactions.)

In the papers which I have had the honour of addressing to the Society on the arrangement of the nerves of the human body, I have proceeded upon a comparison of the nerves of the spinal marrow with the nerves of the encephalon.

It was shown, that the former were compounded of filaments possessing different powers, and that each nerve having several properties or endowments collected within itself, proceeded to its destination without intricacy.

Unless we had discovered the composition of the roots of these nerves, we should have continued to suppose that one nerve was simple in its structure, and yet capable of bestowing the very different properties of motion and sensation.

But, having satisfied myself that the roots of these nerves had distinct powers, I followed up the columns of the spinal marrow; and, with a knowledge of the composition of these nerves as a key, I examined the different properties of the nerves of the encephalon. Here, in the head, the nerves arise simply, and diverge to their destinations, without the close compact or union which the spinal nerves form; and, accordingly, the anatomy of these nerves of the brain affords satisfactory proof of their uses or functions. I am about to show, that every muscle has two nerves, of different properties supplied to it. This I could not have ascertained by examination of the spinal nerves alone, because of the intimate union of all their fibres; I had recourse, therefore, to the nerves of the head. By prosecuting those inquiries which led to the distinction of the different classes of nerves, I hope now to demonstrate, *that, where nerves of different functions take their origin apart, and run a different course, two nerves must unite in the muscles, in order to perfect the relations betwixt the brain and these muscles.*

It may be in the recollection of the society, that my first paper showed the difference of the nerves of the face: by dividing one nerve, sensation was destroyed, whilst motion remained; and, by dividing the other, motion was stopped, whilst sensibility remained entire.

Other parts of the nervous system since that time have engaged my attention, and it is only now that I am able to make full use of the facts announced in my first paper, which were indeed expected to lead to further improvement of our knowledge of the animal economy. When I distinguished the two classes of nerves going to the muscles of the face, and divided the motor nerve, and when the muscles were deprived of motion by this experiment, the natural question suggested itself,—of what use are the nerves that remain entire?

For a time, I thought that the fifth nerve, which is the sensitive nerve of the head and face, did not terminate in the substance of the muscles, but only passed through them to the skin; and I was the more inclined to this belief, on observing that the muscular parts, when exposed in surgical operations, did not possess that exquisite sensibility which the profusion of the sensitive nerves would imply, or which the skin really possesses.

Still dissection did not authorize this conclusion. I traced the sensitive nerves into the substance of the muscles: I found that the fifth pair was distributed more profusely to the muscles than to the skin; and that, estimating all the nerves given to the muscles, the greater proportion belonged to the fifth or sensitive nerve, and the small proportion to the seventh or motor nerve. On referring to the best authorities, as Meckel [*], and my excellent preceptor Monro, the extremities of the fifth were described by them as going into the muscles, so that of this fact there cannot be a doubt.

Having in a former paper demonstrated that the portio dura of the seventh nerve was the motor of the face, and that it run distinct from the sensitive nerve, the fifth, and observing that they joined at their extremities, or plunged together into the muscles, I was nevertheless unwilling to draw a conclusion from a single instance; and, therefore, cast about for other examples of the distribution of the muscular nerves. It was easy to find motor nerves in combination with sensitive nerves, for all the spinal nerves are thus composed; but we wanted a muscular nerve clear in its course, to see what alliance it would form in its ultimate distribution in the muscle. I found in the lower maxillary nerve the example I required.

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[*] Meckel de Quinto Pare Nervorum Cerebri.

The fifth pair, from which this lower maxillary nerve comes, as I have elsewhere explained, is a compound nerve; that is to say, it is composed of a nerve of sensation and a nerve of motion. It arises in two roots; one of these is the muscular nerve, the other the sensible nerve; on this last division the Gasserian ganglion is formed. But we can trace the motor nerve clear of the ganglion, and onward in its course to the muscles of the jaws, and so it enters the temporal, masseter, pterygoid, and buccinator muscles.

If all that is necessary to the action of a muscle be a nerve to excite to contraction, these branches should have been unaccompanied; but, on the contrary, I found that, before these motor nerves entered the several muscles, they were joined by branches of the nerves, which came through the Gasserian ganglion, and which were sensitive nerves.

I found the same result on tracing motor nerves into the orbit, and that the sensitive division of the fifth pair of nerves was transmitted to the muscles of the eye, although these muscles were supplied by the third, fourth, and sixth nerves.

A circumstance observed on minute dissection remained unexplained: when motor nerves are proceeding to several muscles, they form a plexus,—that is, an interlacement and exchange of fibres takes place.

The muscles have no connection with each other, they are combined by the nerves; but these nerves, instead of passing betwixt the muscles, interchange their fibres before their distribution to them, and by this means combine the muscles into classes. The question, therefore, may thus be stated. Why are nerves, whose office is to convey sensation, profusely given to muscles, in addition to those motor nerves which are given to excite their motions? and why do both classes of muscular nerves form plexus?

To solve this question, we must determine whether muscles have any other purpose to serve than merely to contract under the impulse of the motor nerves. For if they have reflective influence, and if their condition is to be felt or perceived, it will presently appear that the motor nerves are not suitable internuncii betwixt them and the sensorium.

I shall first require, if it be necessary to the governance of the muscular frame, that there be a consciousness of the state or degree of action of the muscles? That we have a sense of the condition of the muscles, appears from this: that we feel the effects of over-exertion and weariness, and are excruciated by spasms, and feel the irksomeness of continued position. We possess a power of weighing in the hand:—what is this but estimating the muscular force? We are sensible of the most minute changes of muscular exertion, by which we know the position of the body and limbs, when there is no other means of knowledge open to us. If a rope-dancer measures his steps by the eye, yet, on the other hand, a blind man can balance his body. In standing, walking, and running, every effort of the voluntary power, which gives motion to the body, is directed by a sense of the condition of the muscles, and without this sense we could not regulate their actions.

If it were necessary to enlarge on this subject, it would be easy to prove that the muscular exertions of the hand, the eye, the ear, and the tongue, are felt and estimated when we have perception through these organs of sense; and that without a sense of the actions of the muscular frame, a very principal inlet to knowledge would be cut off.

If it be granted that there must be a sense of the condition of the muscle, we have next to show that a motor nerve is not a conductor towards the brain, and that it cannot perform the office of a sensitive nerve.

Without attempting to determine the cause, whether depending on the structure of the nervous cord, or the nature or the source of the fluid contained, a pure or simple nerve has the influence propagated along it in one direction only, and not backwards and forwards; it has no reflected operation or power retrogade; it does not both act from and to the sensorium.

Indeed, reason without experience would lead us to conclude, that, whatever may be the state or the nature of the activity of a motor nerve during exertion, it supposes an energy proceeding *from* the brain *towards* the muscles, and precludes the activity of the same nerve in the opposite direction at the same moment. It does not seem possible, therefore, that a motor nerve can be the means of communicating the condition of the muscles to the brain.

Expose the two nerves of a muscle, irritate one of them, and the muscle will act; irritate the other, and the muscle remains at rest. Cut across the nerve, which had the power of exciting the muscle, and stimulate the one which is undivided, the animal will give indication of pain; but, although the nerve be thus injured, so as to cause universal agitation, the muscle with which it is directly connected does not move. Both nerves being cut across, we shall still find that, by exciting the nerve, the muscle is made to act, even days after the nerve has been divided; but the other nerve has no influence at all.

Anatomy forbids us to hope that the experiments will be as decisive when we apply the irritants to the extremities of the divided nerves which are connected with the brain; for all the muscular nerves receive more or less minute filaments of sensitive, and these we can trace into them by the knife, and consequently they will indicate a certain degree of sensibility when hurt. To expose these nerves near their origin, and before any filament of a sensitive nerve communicates with them, requires the operator to cut deep, to break up the bones, and to divide the bloodvessels. All such experiments are much better omitted; they never can lead to satisfactory conclusions.

Experience on the human subject most abundantly illustrates these facts. For example, a patient of mine having, by a tumour pressing the nerves of the orbit, lost the sensibility of the eye and eyelids, she retained the motion of the eyelids by the portio dura coming round externally, and escaping the pressure which injured the other nerves. Here the course of sensibility backwards to the brain was cut off, while the course of volition was free; she could not tell whether the eyelid was open or shut, but, being asked to shut the eye, which was already closed, she acted with the orbicular muscle, and puckered the eyelids. When I touched the eye there was no winking, because the sensitive fifth pair had lost its power, although she could command the motion by voluntary exertion.

In another instance, where the eye was insensible, touching the eye gave rise to a blush of redness and to inflammation, because the *part* was excited, but the muscles were not called into action: the relations which connect the sensibility of the eye with the motions of the eye and eyelid, are established in the roots of the fifth and seventh in the brain: the loss of function of the fifth nerve, therefore, interrupted the circle. Here, too, the motor nerve of the eyelid was perfect, and the eyelid readily acted under the influence of the will, but when the eyelid was touched or pricked, it communicated no sensation. Is this insensibility of a motor nerve, owing to the course of its influence being from the brain, and not towards it? When the nostril had lost its sensibility from an affection of the first pair, we could not excite sneezing;—when the tongue and cheek had lost sensibility, the morsel was permitted to remain between the tongue and cheek until it was offensive, although the motions both of the tongue and cheek were perfect. All these phenomena correspond with the experiments on animals.

Now, it appears the muscle has a nerve in addition to the motor nerve, which, being necessary to its perfect function, equally deserves the name of muscular. This nerve, however, has no direct power over the muscle, but circuitously through the brain; and by exciting sensation, it may become a cause of action.

Between the brain and the muscles there is a circle of nerves; one nerve conveys the influence from the brain to the muscles, another gives the sense of the condition of the muscle to the brain. If the circle be broken by the division of the motor nerve, motion ceases; if it be broken by the division of the other nerve, there is no longer a sense of the condition of the muscle; and therefore no regulation of its activity.*

We have noticed, that there is a plexus formed both on the nerves which convey the will to the muscles, and on the nerves which give the sense of the condition of the muscles. The reason of this I apprehend to be, that the nerves must correspond with the muscles, and consequently with one another. If the motor nerve has to arrange the action of several muscles, so as to produce a variety of motions, the combinations must be formed by the interchange of filaments among the nerves, before they enter the muscles, as there is no connection between the muscles themselves. As the various combinations of the muscles have a relation with the motor nerves, the same relations must be established by those nerves which convey the impression of their combinations; and a similar plexus or interchange of filaments therefore characterizes both.

We have seen that the returning muscular nerves are associated with the nerves of sensibility to the skin, but they are probably very distinct in their endowments, since there is a great difference between conveying the sense of external impressions and that of muscular action.

In surgical operations, the fact is forced upon our attention, that the pain of cutting the skin is exquisite, compared with that of the muscles; but we must remember that pain is a modification of the endowment of a nerve, serving as a guard to the surface, and to the deeper parts consequently. This is further exemplified in the sensibility of the skin to heat; whilst, on the contrary, a muscle touched with a hot or cold sponge during an operation, gives no token of the change of temperature but by the degree of pain.

Many of the nerves which perform the most delicate operations in the economy, are not more sensible to pain than the common texture of the frame. The lower degree of sensibility to pain possessed by the muscles, and their insensibility to heat, is no argument against their having nerves which are alive to the most minute changes of action in their fibres.

When the anatomist shall find both the portio dura of the seventh and the fifth going to the integuments of the head and the face, he may naturally ask, why are there two nerves to the surface? and he will probably reflect, that although the principal office of the nerves of the skin is to convey impression to the sensorium, yet the influence of the mind is conveyed to the surface. The condition of the mind in passion, for example, is as forcibly communicated to the skin as to the muscles themselves; and, therefore, if a branch of the fifth be necessary to convey sensation from the surface to the sensorium, the seventh is necessary to the change of vascular action, and to the condition of the pores, when affected by a cause proceeding from within outwards.

I feel a hesitation when I reason upon any other ground than on the facts of anatomy. Experiments are more apt to be misinterpreted; and the very circumstance of a motor and sensitive nerve being generally combined together, affords a pregnant source of error.

It is natural to suppose that the galvanic influence might be brought to bear on this subject; but I may be permitted to suggest to any one who pursues it in this way, that it will be necessary to distinguish the effects produced by the nerve as a mere conductor, and when performing its living functions. The nerve, dead or alive, may convey the galvanic power like a wet cord; but if the nerve be in possession of its living property, a great deal will depend on the direction in which the galvanic fluid is transmitted.

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* Thus led to conclude, that there is motion in a circle, we nevertheless cannot adopt the hypothesis of circulating fluids. That a fluid does not proceed from the brain, we may learn from this, that, on touching the end of a motor nerve which has been some days separated from the brain, the muscles were excited, as when the nerve was first divided. The property, however it may be defined, is therefore in the nerve. Our language might, perhaps, be made more precise, if we used terms which implied the course of nervous influence, whether from or towards the brain; but it will be difficult to express this without the aid of hypothesis.

If it be transmitted against the course of the nervous influence, it will reach the muscles and act feebly, but the power of the nerve will not be exercised upon the muscles; but if it be transmitted in the proper course towards the muscles, the nerve itself will be excited, and its power propagated so as to produce violent action in the corresponding muscles.

IV. PHYSIOLOGY.

Experiments on the process of Digestion, in a Boy with a fistulous opening into his Stomach. By Dr William Beaumont.

Alexis San Martin, a lad of 18 years of age, received a hail shot, from a musket, into his left side, in consequence of which, after a suppuration of more than twelve months, there remained a fistula of the stomach, immediately between the fifth and sixth ribs. Upon this Mr Lovell, an American surgeon, the reporter, undertook to conduct some experiments with regard to digestion. The result of these researches are as follows:

Experiment 1.—About 12 o'clock noon of August 1st 1825, in the Fort of Niagara, Dr Beaumont introduced into the fistula, still remaining between the ribs of San Martin, the following substances, placed upon a silk thread, at moderate distances from each other, in order to avoid pain being produced by their introduction, a piece of highly seasoned *beef à la mode*, a piece of lean salt beef, a piece of raw salt fat pork, a piece of lean raw beef, a piece of powdered beef boiled, a morsel of bread, and a portion of raw, white cabbage, each about two scruples. The lad proceeded with his domestick occupations. About an hour after the pieces were drawn out and examined. The cabbage and the bread were about half consumed, the meat unchanged, upon which they were returned. At the end of the second hour the cabbage, bread, pork, and boiled beef were quite digested and disappeared from the thread, the other pieces of meat were but little affected. They were returned as before. At the third hour, the stoved and spiced beef *(beef à la mode)* was partly consumed, the raw beef was some little softened upon the surface, but its cellular texture was, upon the whole, quite firm and uninjured. The fluids of the stomach smoked, and tasted somewhat rancid. The lad complained of some pain and uneasiness in the breast. The matters were again returned. About the fifth hour, he suffered considerable oppression in the stomach, universal weakness and faintness, and some headach. The pieces of meat which remained, appeared much the same as at the two preceding hours, the fluids were more rancid and acrid. As he now complained very much, they were not again returned.

The following day he complained of sickness, headach, and costiveness; pulse weak, and skin dry, tongue loaded; and upon the internal surface of the stomach, appeared many little white specks or patches, as if of coagulable lymph. Dr Beaumont introduced, through the opening, half a dozen pills, each containing four or five grains of calomel, which, after three hours, purged strongly, and removed all the symptoms above mentioned, as also the peculiar aspect of the lining of the stomach. Their operation was exactly the same as if they had been taken by the mouth, only the sickness, usually produced by swallowing pills, was wanting.

Experiment II.—On the 7th of August, about 11 o'clock forenoon, after San Martin had fasted for seventeen hours, the tube of Kendall's thermometer (Fahrenheit's) was put fairly into the stomach through the opening, and five minutes afterwards the mercury rose to 100° Fahrenheit, at which degree it remained steady. By the introduction of a syringe of elastic gum through the opening, an ounce of pure gastrick juice was extracted, put into a three ounce glass, and in this was deposited a piece of boiled corned beef, about the size of the little finger. The vessel was duly supported, placed in an earthen vessel filled with water at 100 Fahrenheit, which was kept steadily at the same temperature, by means of a sand-bath. After forty minutes, the solution had evidently commenced upon the surface of the beef; after fifty minutes, the fluid became turbid and cloudy, the external fabrick began to seem slack and loose; after sixty minutes, it assumed the appearance of pap, and, about one o'clock, when the solution had proceeded as regularly as in the last half hour, the cellular membrane seemed entirely destroyed, the muscular fibres lay loose and unconnected, and floated about in very fine, short, soft, white flexible threads. About three o'clock the muscular fibres had disappeared to the half of what they had been two hours before. About five they were almost entirely dissolved, and only some few fibres remaining. At seven their structure was totally decomposed, and only a very few small fibrils were seen floating in the fluid, which at nine, was, in every respect, a complete solution. The gastrick juice, which, when recently taken from the stomach, appeared almost as clear and transparent as water, had, about this time, the appearance of bubbles, and deposited, after it had been allowed to rest a few minutes, a fine, flesh coloured sediment.

Experiment III.—At the same time with the above experiment, a piece of meat, exactly of the same kind, was introduced into the stomach through the opening. After an hour (about twelve o'clock) it was found, on being brought forth, to be about as much dissolved as that in the vessel, and resembling it very much in appearance; so it was again returned to the stomach. About one o'clock the silk thread was drawn, but the meat had separated itself from it, and was dissolved. The operation of the gastrick juice upon the beef was exactly the same in the stomach as in the vessel, only more rapid after the first hour, and sooner completed. In both the action began upon the surface, and confined itself to the latter alone. Motion accelerated the solution in the vessel, for it removed the superficial dissolved pulp, which still embraced what was entire, and opened a way for the gastrick juice to the still undecomposed parts of the meat introduced.

Experiment IV.—On August 8th, at six in the morning, an ounce and half of gastrick juice was put into a three ounce phial, and, as in the second experiment, two small pieces of boiled chicken, taken from the back and breast, were introduced. The solution proceeded as in the former experiment, only somewhat more slowly, as from the more solid texture of the cellular membrane in fowl than in beef, the solution appeared to be more reluctant, whilst the gastrick juice could not in it, as in the former, make an impression upon the spaces between the fibres of the muscles, but merely acted upon their surface. The solution took place, like that of a piece of gum in the mouth, till even the smallest particle was dissolved. The colour of the fluid, after the chicken had been dissolved, was greyish white, appearing more milky, and less full of bubbles, than the beef in the former experiment with the gastrick juice. The deposit also was clearer, but, in other respects, similar. Both vessels were kept from the 7th and 8th of August, in which the experiments were made, to the 6th of September, closely shut up. Their contents were without fetor, without acid, and void of any taste or smell whatever. Soon after the 6th of September, the phial with the beef began to corrupt and smell strongly; that with the chicken remained sweet and in good condition.

It is much to be regretted that the youth, upon whom these experiments were conducted, (perhaps from a dread of their being continued), afterwards secretly withdrew, taking his flight towards Canada. The above important details occur at length in the Medical Recorder of January 1826. The present abridged form is translated from the very able and judicious "Magazine of Medical Science," of Drs Gerson and Julius, published at Hamburgh, June 1826.—Edit.

An Elementary System of Physiology. By JOHN BOSTOCK, M.D. F.R.S. L.S. and H.S. M.R.I. Member and Vice-President of the Geological Society; Member and late President of the Edinburgh Medical Society; Honorary Member of the Literary and Philosophical, and of the Historical, Societies of New York; Lecturer on Chemistry at Guy's Hospital; and Professor of Physiology in the Liverpool Royal Institution. 2 vols. 8vo. Published by Baldwin, Craddock & Joy, Lond. 1824.

THE avowed object of Dr Bostock in this work is to present the student with a concise view of the present state of the science, embracing an account of the most important *facts* and *observations*, as well as of those theories and hypotheses which have been the most generally received, or have been sanctioned by the authority of the most eminent names; and, by referring his reader to the source from whence he has derived his information, to enable him to examine for himself. He has religiously abstained, he assures us, from quoting any work which he has not himself consulted; a boast which is also made by Professor Rudolphi, and which is nearly as senseless as the presumption of Dr Cullen and Mr John Hunter, that a disease which they themselves had not seen was hardly to be considered as in existence, and certainly not entitled to any but the slightest notice. How few are all the books of Physiology that either Dr Bostock, Dr Rudolphi, or any one man else, can have an opportunity of consulting, compared to the vast number of facts or opinions to which the physiologist, if he attempts to deliver the history of that science, must have occasion to appeal? In Magendie's Manual of that science, written expressly for the purpose of *excluding* the conjectural from the ascertained parts of physiology, there are still 860 distinct heads, or chapters, and to allow one reference to each of these, would certainly be a very moderate principle of computation. It may be said, that authors thus diminish the danger of misquotation. But is the mere possibility of misquotation a greater evil than no quotation at all? Nay, is it so certain that the quotations made from books which they have actually consulted are so free from mistake, so exact in their directions? Dr Bostock's second volume lies open before us, at page 198, and the reference to M. Saissy's experiments upon hybernating animals, published almost before we were born, is made thus,

"7 Edwards, d'Influence, &c. c. iii."

Now, it happens that M. Edwards has exactly four c. iii.'s in his valuable work; that in none of these can there be delivered any thing more than a mere notice of M. Saissy's well known experiments; so that the whole tendency of this reference must be to mislead, rather than to direct, the mere student. Nor is this to be held a pernicious error of Dr Bostock; we point it out merely to prove how vain it is in man to reject the ordinary aids that offer themselves in the acquisition of knowledge, whilst straining after a minute accuracy which poor human nature, with all her ambition, and pedantry, and hypercriticism, can never attain. Let her be humble as she is weak.

The scheme of what is yet published of Dr Bostock's Elementary System, (the exact import of which designation we do not pretend fully to understand) may be abridged as follows:

Introduction.—History.

Vol. I.—Membrane.
Bone.
Muscle.
Nervous System.
Circulation.
Blood.

Vol. II.—Respiration.
Animal Temperature.
Absorption.

The whole science of functions he designs to divide into Contractile and Sensitive.

For the length that Dr Bostock has proceeded, he has not been unsuccessful. The industry with which he has collected many lesser facts added to the science by the experiment and observation of the last forty years, and the *general* precision with which he has added references to the principal facts and conclusions, are such as render his work the most useful supplement to Haller that has yet been published. We would not, by any means, be understood to say, that it might not have been bettered, even in those respects upon which its chief value depends; but we cannot think criticism like this either just or reasonable; and if Dr Bostock has condensed into two volumes, which are all that is yet published, much that the reader could have no access to elsewhere, neither the reader, nor any one else, has right to complain. Dr Bostock is so well known as a writer and a cultivator of science, that specimens of his style would be to most of our readers superfluous, and we think it better to take leave of him by recommending his Elementary System, in the most unqualified manner, to their notice, with the assurance, that they will not find it fall short of the general accuracy and research which obtains in his other writings. Literary immortality is not of our giving, and is, indeed, rarely the lot of compilations like the present; but though much too bulky for all that the great majority of medical students require to know of physiology, we can venture to predict, that it will be some time before it is ejected from its place in the library, by a work of greater industry or condensation.

V. ZOOLOGY.

Experimental Researches in Natural History. By John Murray, F. S. A., F. L. S. D. Fellow of the Horticultural and Geological Societies; Member of the Wernerian and Meteorological Societies, &c. Macphun, Glasgow, 1826. 12mo. pp. 177.

In this interesting little volume, Mr Murray, favourably known as an able lecturer upon theoretical and experimental chemistry, as a traveller, and a naturalist, has condensed into a modest form, for the pocket, the substance of his communications to the various scientifick periodicals of the day, upon the phenomena of the *glow-worm*, the *chameleon*, the *luminosity of the sea*, the *ascent of the spider into the atmosphere*, and the *torpidity of the tortoise*. We confess we do not dislike this method of gathering up a few detached natural subjects into a convenient *fasciculus:* for, though such a publication may be considered unfavourable to systematick reading or reference, yet it has the great advantage of meeting many eyes, and informing many minds, that would never once have attended to the matters considered, under the technical language in which they lie buried in our systems of natural history, our encyclopedias, and our scientific transactions. Indeed we are unreasonable enough to wish that Mr Murray, when doing so much good in breaking through systematick trammels, had gone a little farther, by venturing upon the use of plain unadorned language in his reasonings and descriptions: for, even we, whose lot has been cast among hard words and knotty, crabbed terms, find sometimes a little difficulty in fixing his exact meaning, and always disappointed when an author, so evidently master of his subject, puts us to the trouble of seeking it. We look back, too, with fond recollections to those sunny days when the hallowed names of Newton and Halley first allured our boyish attention to the gravest subjects in physics, because published in the manner adopted by Mr Murray, under the irresistible title of *Miscellanea Curiosa.* Like the work before us, these "Curious Miscellanies," were merely a transcript of their best papers, "The true Theory of the Tides, by *Mr Isaac Newton*;"—"A theory of the Variation of the Magnetical Compass, by *Mr E. Halley*,"—&c. but in language so elegantly simple, and so genuinely English, that it was impossible not to make an effort to master their contents.

Glow-worm.—The following extract comprehends the sum of Mr Murray's deductions with regard to the glow-worm:—

" I. Light, as connected with the glow-worm, is a subtle evanescent material principle, perhaps connected with a peculiar organized structure, or attached to a substance circumfused round the vitellula of the ovum, or integrating with it; unsupported by any chemical action, and confinable by the transparent film or capsule which imprisons it.

" II. This light is permanent, and independent of any power possessed by the insect over it, except in so far as it can withdraw the luminous matter from the window or transparent medium through which it is discerned, burying it in the interstitial matter, or secreting it under an opaque shell.

" III. The light is not connected with any of the functions of animal life, as to its support or continuance, as with the spiracula or breathing apparatus; and even the extinction of life itself does not extinguish the power and property of emitting light.

" IV. The luminous matter is not adherent exteriorly, but included in a capsule which preserves it from extrinsic agency and contingency.

" V. The light seems connected with peculiar organization, which elevated temperatures destroy, perhaps by decomposition, but which low temperatures only suspend temporarily. This very suspension, indeed, by cold, and restoration by warmth, and by a temperature equal to that of animal heat, goes far to prove a peculiar function *inherent in the capsule*, and capable of educing and sustaining the phenomenon.

" The use to which it is subservient in the animal economy, it is difficult to ascertain; we see but in part. Its very existence, however, proves it is a condition indispensable to its being. Providence has tipt the insect with living fire,—a non-material ignition,—burning, yet not consumed,—even extinguished by a temperature which the animal system, with which it is so singularly interwoven, cannot withstand. It may be a " lamp to its path," to guide it to its food, subserving the additional purpose of warding off its enemies; while it may also be the luminous point that directs the nightingale to its proper prey." Pp. 16, 17, 18.

Luminousness of the Sea.—It is well known, that three different views of the cause of the luminousness or phosphorescence of the sea, obtain among philosophers. It was long since understood, that luminous insects frequently produced this appearance; but it has also been maintained, that the same effect is occasionally generated by particles of a peculiar phosphorescent matter; whilst others have referred the same phenomenon, and its connection with certain states of the weather, to electrick causes. Mr Murray seems to make out, in a satisfactory manner, both from his own observations and experiments, and the writings of others, that the luminousness, in *every case*, is to be referred to animals of very various *genera* and *species*, but all agreeing in the quality of shining brightly in the dark. Nay, he considers, very ingeniously we think, that the shining matter of putrescent fish, as of the whiting (see Ure's Chem. Dict. art. *Light;* Hulme, Phil. Trans. 1790), is produced merely by parasitick animalcules of the same class: and we think the circumstance of an incipient putrescence (in which there is always an increase of heat), favouring its appearance, whilst a high degree, according to Dr Hulme, diminishes it, admits of an easy explanation, on the same hypothesis. Even the phosphorescence of rotten wood may be referable to a similar cause. We subjoin Mr Murray's concluding remark, merely premising, that, in a note which occurs at a few pages preceding, he " *claims for himself* the *priority* of considering the luminous appearance of the sea, as to its increase of brilliancy of appearance on the coast, as connected with this new meteorological feature,—the coming storm."

"From the edge of the pier at Stranraer, on the coast of Scotland, I took up a small portion of sea-water, including some luminous substance. It was some time, indeed, before I could recognize the existence of any foreign body, to which I could attribute the luminous effect. I, however, clearly perceived, that there was no phosphorized oleaginous matter on the surface of the water. At length the shadow of an animal, in rapid movement, appeared depicted on the bottom of the basin, itself transparent as the medium in which it floated. It seemed to be a *beroe*, and identical with the species called *fulgens* by Mr Macartney.—(Phil. Trans. for 1800, p. 260.) The animal, when at rest, exhibited a somewhat crescent form. The ciliary processes of the ribs, which, in swimming, described a tortuous motion, seemed to be these parts from whence the light was derived, but of which the whole body occasionally partook. The beroe died a few minutes after I had received it, which I attributed to the light of the candle, rather than to increment of temperature in the medium. When taken up on the point of a probe, it had the appearance, and nearly the consistency of jelly. It was diaphanous, and presented a spherical figure of about one-sixth of an inch in diameter.

"The late Professor Smith of Christiana, considered that the luminous appearance which diffuses itself over the whole surface of the sea, in the Atlantic, arose from a dissolved slimy matter; and that the most minute glittering particles, when highly magnified, had the appearance of solid spherical bodies. I cannot doubt but these luminous particles originated with some of the *mollusca* and *crustacea* adverted to; that they had been detached by the action of the waves, or friction, the consequence of other causes, as may appear in the sequel. Another quantity of sea-water presented to me the *medusa*, perhaps the species called *scintillans*. I could discover no other kind. The medusa was about three-fourths of an inch in diameter. It died very shortly after I brought it home; and perhaps the light, as in the former case, was the cause. It is supposed that the *Scolopendra electrica* is destroyed by exposure to solar light: and Mr Macartney observes, that the medusa always retreated from the surface as soon as the moon rose. He also states, that exposure to day light deprived them of the power of shining.

"By agitating the salt water containing the medusa, occasional gleams were exhibited. I also transferred it to a basin of *fresh* water, when it sunk to the bottom like a falling star. The effect there was of the most beautiful description. There appeared strings of minute beads of fire, like a chain illuminated by electricity. On stirring the fluid, the luminous points were disentangled, and displayed a pretty hemisphere of stars. The floating fire soon, however, ceased to lighten the fluid mass; agitation could not restore the effect, though a few drops of acid caused a solitary gem to twinkle. The medusa was transparent and gelatinous like the other. There can be no doubt but it was the tendrils or feelers which were vested with this brilliant and beautiful ornament: and I presume that these living fires originated here, as in the ciliary processes of the beroe; and were, subsequently, by some peculiar mechanical impulse, transfused over the transparent membranous sac or disc.

"It seems quite certain, therefore, that the luminosity of the sea is a phenomenon dependent on the presence of luminous marine animals." P. 80.

Chameleon.—Mr Murray seems to have ascertained, by experiment upon the living animal, imported into this country, the following interesting particulars.

1. The side farthest removed from the source of light, invariably discovers the lightest colour.

2. The temperature of the darkest coloured parts was constantly greater than that of the lighter. Thus on July 20. 1824, the temperature of atmosphere at Hull, was 72°; of skin of the chameleon, on the lighter side, 73°; on the darker side, 73°.25; where it was yellow, 73°.5 to 74°.5.

3. Upon very slight pressure, as with the ball of the thermometer, the part becomes snow-white.

4. In sunshine, the bands become more distinct, and the difference of temperature in the light and dark parts *greater*.

5. That it is fairly deducible, from these and other collateral circumstances,

that the change of colour in the chameleon is, in every instance, to be attributed simply to modifications in its circulation: in short, to the greater or less quantity of blood sent to different parts, and the diversity of refraction exercised by the latter.

Ascent of the Spider.—Of the aërial ascent of the *spider*, Mr Murray entertains the very probable opinion, that the animal projects its filaments into the air, by the aid of an electric state, which repels the particles of the atmosphere, and makes way for it in whatever direction it requires to be projected. The following reasons, upon which his views are founded, appear to be of great weight.

1. The spider which exhibits this singular phenomenon, so long since noticed by Dr Martin Lister, is of a *peculiar species*, being distinguished from the *Aranea obstetrix* of naturalists. There are two *Araneæ obstetrices* mentioned. That of Strack, in particular, is striped, and has the eyes arranged in the form of a square. The other is also different from the true aërial spider, which Mr Murray therefore denominates *Aranea aeronautica*.

2. They are often suddenly precipitated from the atmosphere during meteorological changes, or the loud firing *of* artillery.

3. Mr Murray has observed, in a favourable position, a visible aura, or atmosphere, around the thread.—P. 130.

4. He finds the thread by which the spider suspends itself, considerably deflected from the perpendicular towards the wall, which he attributes to the attraction subsisting between the wall, as the conductor, and the electrified filament.

5. They cannot ascend by a single thread, except the air be very warm, and its electric character high.

6. The propelled threads do not interfere with each other. They are divellent, repelling each other. Flame does not attract them; the finger does.

7. When a metallic conductor is brought near the suspended spider, it disarranges its projectiles; and the insect, conscious of some counteracting agency, promptly coils up its threads. A stick of sealing-wax, when excited, repels the thread, which is therefore negative.

8. The threads are propelled into the atmosphere, in defiance of the laws of gravitation, and the resistance of the medium; and remain always in the precise place in which they were impelled.

We have followed Mr Murray with pleasure in these experiments upon insects, because we are persuaded that Hull, the theatre of most of his observations, from its sultry and humid situation upon, or, more correctly to speak, under, the banks of the Humber, must be the pink of positions for entomological study, in all its range, from the bug to the chameleon. It would be unfair also, to shut his book without adding, that Mr Murray adds to considerable acuteness, a strong sense of the benevolence and power of the AUTHOR of so many wonders: and that we think his work well calculated to make serious impressions upon the docile, but often volatile apprehension of youthful readers. It concludes with an account of the habits of a tortoise, preserved in the bishop's garden at Peterborough, which must, by documents preserved in the archives of that cathedral, have been at least 220 years old at the time of its death in 1821!

Dracunculus.

"I have perused a letter from Mr Kemball, a surgeon on this establishment, which sets at rest the question concerning the vitality of the Dracunculus. Mr Kemball mentions, that one of these animals, which was extracted by incision from the arm of a Sepoy, exhibited appearances of life and motion in presence of several officers, who can now bear testimony to the fact." Mr Best in Trans. Med. and Phys. Society of Calcutta, vol. i. p. 113. Calcutta, 1825.

Drs Kennedy and Smytton, in separate papers of the same volume, also fully corroborate this testimony.

VI. PHARMACY.

Application of the Wurtsburg "Epispastick Ointment." By Professor WENDT. of Copenhagen. Nye Hygæa, February 1826.

IN the hospital of Wurtzburg, the following very active blistering ointment is employed; in a great many cases it entirely supersedes the necessity of resorting to the terrors of the actual cautery.

℞. Ung. Basil. Nigr. ʒii.
Pulv. Canth. gr. xxv.
Merc. Subl. Corr.
Butyr. Ant. ā ʒss.
M. f. unguentum.

This ointment, in about half an hour, produces redness of the skin, which then begins to smart very strongly, as if it had been burned. Soon afterwards, a blister rises, so much more rapidly as the ointment is recent. Professor Wendt employed it with much advantage, at Copenhagen, in a patient delirious from puerperal fever. The wound healed easily, in the course of a few days. The patient lay in a comatose state; the ointment was allowed to remain for a whole night, and formed an eschar, which soon separated with a free discharge of pus.

A boy who, according to his own account, had been bit eight days before in the left leg, by a dog that was not mad, came into the hospital with gastrick symptoms. The wound from the bite was insignificant; but Professor Wendt still had the precaution to consider suppuration necessary, which, after two hours, by means of the present ointment, formed a complete *eschar* all around.

Examination of the Medical question respecting Phosphorus, whether, when given as an internal remedy, it is useful, injurious, or ambiguous. By PIETRO MUSCATI.

THE opinions of authors respecting phosphorus are so various and contradictory, that, according to our author, better experiments are necessary than the insulated medical cases which have hitherto appeared. In fact, if we condemn phosphorus as a substance highly poisonous, it may be said that corrosive sublimate, belladonna, aconite, hyoscyamus, muriate of baryta, and arsenic itself, with many other poisons, are consequently employed in medicine. And if, on the contrary, the salutary effects of phosphorus are adduced, it may be answered, that, in subjects to which it was administered with due precaution, and in moderate doses, indications of gangrene have been found produced in the stomach and in the intestines, similar to what would have been generated by its application to the skin in free atmospherick air; in fine, if the above mentioned poisons operate with so much impunity, and if phosphorus may produce mischief even when exhibited according to the rules of art, there must be something in phosphorus not applicable to the other poisons employed in medicine, by which, without the possibility of being foreseen or prevented, it acts sometimes as a very active poison.

In order to discover this peculiarity, the illustrious author thinks it necessary to examine, *first*, the physical and chemical properties of phosphorus; *secondly*, its changes in preparations in which it is employed as a medicine; *thirdly*, what modification, or what changes, it undergoes after having been introduced into the stomach.

With regard to the first particular, phosphorus, as is well known, is a substance eminently inflammable by mere exposure to free air, and much more so when it is in contact with oxygen. It takes place at the temperature of

66° Fahr., according to the observation of Higgins, and if put into the rarefied air at 60°, or even still less. According to the experiments of Van Marum, it burns also in other gases, and in air already vitiated; and it is to be observed here, that it burns more easily when it is surrounded by some substances even not inflammable, for example cotton, as Van Marum has demonstrated by exriments. The product of phosphorus, after it has been kindled, is a very active acid, at first under the form of a white vapour, easily expansible and inflammable; upon which, the phosphorus that it emits is burned over again, and is then condensed into an acid of a fixed nature. With regard to the second particular, the author observes, that the most operose forms under which phosphorus has been prescribed, are its solution in alcohol or sulphuric ether, or a fine powder [*], into which it is reduced by a peculiar method, and then exhibited in grains, mixed with some conserve or electuary, in the manner practised by Mentz, Hartman, Weikard and Hufeland. The method of infusing or distilling phosphorus has been preferred He prescribes it in alcohol or ether, according to Conradi, Boutaz, Gualtier de Claubry, Lobenstien, Lobel and Lobstein. Perhaps because the result is a limpid fluid, they believe that phosphorus was dissolved in it; but this is not true, as is proved by the phosphorus being found deposited after some time in the form of a fine white powder, equivalent to the whole quantity employed. If, therefore, phosphorus exhibited internally remain inflammable, it is clear, in my opinion, that the true cause why it has sometimes been useful, and at other times has produced violent inflammation of the stomach, gangrenous spots, and death, is the uncertainty of the quantity of phosphorus existing in the preparation. And since the inflammation, or noninflammation, of phosphorus in the stomach, depends upon circumstances that the medical man cannot by any means foresee, it follows, as a necessary consequence, that, however active phosphorus may be, it will always remain an equivocal remedy.

The circumstances which may influence phosphorus in the stomach, cannot be foreseen by the physician, because they will sometimes depend upon different gases contained in the stomach, even in an inconsiderable quantity; at other times upon its finding the stomach empty, and raised, in consequence of the disease, to a temperature higher than what is natural. Alcohol or ether introduced into the stomach evaporates readily by its heat, and leaves the phosphoric powder adhering to its villous parietes, the thin mucous stratum of which is insufficient to prevent, at the temperature of animal heat, its inflammation, when there is a quantity of atmospheric air, or of any gas in the stomach; for it is known to inflame more easily when covered by any thin stratum of heterogeneous or non-inflammable substance. We have thus, in the intrinsic nature of phosphorus, an essential difference between it and any other poisonous substance employed in medicine. The action of the latter upon the stomach is constant and uniform in the same dose, whilst phosphorus, if it does not take fire in the stomach, will become an active diffusible stimulant, which may be very useful in some cases; but if, by circumstances impossible to foresee, it takes fire, it will become a certain instrument of death.

In place of phosphorus in substance, the author would have the phosphoric acid employed, which is free from the danger first mentioned. But he does not speak from his own experience. The memoir is terminated by observations of Signior Jurine, to whom it happened for two successive years, in the same month, without any sensible cause of inconvenience, to see his own urine clearly phosphorescent, and causing the wall upon which it fell, and also some dry leaves which were piled up adjoining to it, to shine brightly. Having retained a little of this urine inclosed in the hollow of his hand, he found not at home any signs or traces of microscopical insects living in it, to which, if not entirely, at least in a great measure, the phenomenon of phosphorescent light in the waters of the ocean is commonly and justly attributed.

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[*] The best method of reducing phosphorus to powder, seems to be that given by Alphonse le Roy. Phosphorus is thrown into hot water, in which it melts; it is then agitated much in the water, and then a quantity of very cold water is suddenly added. The phosphorus falls down in a fine white powder, which being dried upon paper, is mixed with the ingredients chosen for its combination.

Signior Jurine did not find the urine of those that took phosphorus to four, six or eight grains phosphorescent, and not even that of those who took phosphoric acid in lemonade. The phosphorescence of liquid urine, according to the present observation, is a phenomenon totally inexplicable.—*Annali Universali di Annibala Omodei, August* 1825.

Hydriodate of Potash.

It results, from experiments made by M. A. Divergie upon animals, that the hydriodate of potash is a corrosive poison, giving origin to ulcers of the mucous membrane of the digestive organs; to suffusion, emphysema, and to extensive ecchymosis; that it kills animals in the dose of one or two drachms, in consequence of the inflammation which results from it; finally, that, injected into the veins, it kills almost as quickly as the prussic acid, after inducing violent convulsions.

On Poisoning by the Sulphuret of Arsenic. By M. Orfila. (Extract from the Journal de Chimie Medicale, April 1826.)

In a paper which was read before the Royal Academy of Medicine, and afterwards published in the *Journal de Chimie Medicale*, M. Guibourt states, apparently on the authority of experiments made by Hoffman and M. Renault, rather than from his own observation, that pure sulphuret of arsenic is not poisonous, and that the noxious effects produced by some of the arsenical sulphurets of commerce are owing to the admixture of arsenious acid. To prove the inaccuracy of this statement, M. Orfila relates the following conclusive experiments.

1. A current of sulphuretted hydrogen gas was conducted into a solution of arsenious acid, and the precipitated sulphuret was edulcorated with water, till the washings no longer received a yellow colour from sulphuretted hydrogen. On applying 50 or 60 grains of this sulphuret to the cellular membrane of the thigh of dogs, at its inner part, symptoms of poisoning by arsenic soon made their appearance, and the animals died in forty, forty-eight, or sixty hours from the commencement of the experiment.
2. Similar effects were occasioned when 60 or 70 grains of the same sulphuret were introduced into the stomach of a dog, whose esophagus was afterwards tied to prevent vomiting.
3. The native orpiment of Tojora in Hungary applied to the cellular membrane of the thigh of dogs, in quantities of one to two drachms, caused death, with symptoms of poisoning, in the space of about two days.
4. The same native sulphuret introduced into the stomach of a dog, to the extent of one drachm, killed the animal in fifty hours.
5. Forty grains of native realgar, from Kapnicke in Transylvania, applied to the cellular membrane of a dog's thigh, was followed by death after an interval of six days. The stomach and intestines, as in the former cases, evinced unequivocal signs of inflammation. *(Smith.)*

M. Orfila infers from these facts, that the sulphurets of arsenic, both native and artificial, are poisonous, though they should not contain an atom of arsenious acid. Their action is indeed much less violent than that of the acid; and this explains why M. Renault experienced no ill effects from taking four, six, or ten grains of arsenious acid, mixed with a sufficient quantity of sulphuretted hydrogen, for converting the whole of it into a sulphuret.

VII. CHEMISTRY.

Analysis of the Tartar of the Teeth.—By MM. Vauquelin and Logier.

It results from a chemical analysis of the tartar of the teeth, by Messieurs Vauquelin and Logier, that this substance contains 13 per cent. of its weight of an animal matter, yellowish-white, which exhibits not the slightest trace of gelatine, and differs, in consequence, from the animal matter of bone; 9 per cent. of carbonate of lime; 1.77 grains of tartar contains 15 millegrammes amoniaco-magnesian phosphate. These able chemists believe that the animal matter is analogous to mucus.—*Journal de Pharmacie, January* 1826. *Bul. de la Societé Med. d'Emul. Nov. et Dec.* 1825.

VIII. BOTANY.

NOTICES of BOTANICAL WORKS.

GEOGRAPHIE des PLANTES, rédigées d'après la Comparaison des Phénomènes que présente la Végétation dans les Deux Continens; par A. DE HUMBOLDT et CH. KUNTH. 1 vol. fol. Paris.

PERHAPS in the whole range of botanical science (and the present period is remarkable for its rapid progress), no work is more likely to excite a greater degree of interest than that now advertised by the above illustrious individuals.

The origin of the science named the "Geography of Plants" (a term said to be first introduced by Menzel, the author of an unpublished *Flora* of Japan), is justly mentioned in the prospectus, as scarcely to date farther back than half a century. How important is such a science to mankind may be estimated by its enabling us to ascertain the number, the aspect, and the distribution of vegetables, under different zones, from the equator to the polar circle; from the depths of ocean, and the recess of mines, to the limits of perpetual snow, whether that be influenced by latitude, altitude, or the nature of the surrounding country. Consequently it teaches us the adaptation of plants to particular climates, and the best means of removing them from country to country, and of rendering them subservient to our wants.

Giraud Soulavie is mentioned as one of the first who endeavoured to illustrate some of the principles of this science, in his "Géographie Physique des Végétaux de la France méridionale;" but with very little success. Our celebrated countryman Arthur Young followed up the investigation with more sagacity. He distinguished, in a vertical section of Mount Mezin, the three zones characterized by the Olive, the Vine, and the Chesnut; to which he added a scale of heights according to the barometer.

Towards the end of the last century, Saussure and Ramond chiefly contributed various additional observations, all which were methodized and farther illustrated in the excellent introduction published by De Candolle in the third edition of the *Flore Française*.

A number of scattered facts were now to be collected from many works and memoirs, which at length were diligently arranged in the important work published by Messrs Humboldt and Bonpland, "L'Essai sur la Géographie les Plantes, fondée sur ses mesures qui ont été éxécutés depuis les 10° de latitude boréale, jusqu'aux 10° de latitude australe." This was the first work exclusively dedicated to this subject. In 1817, Humboldt drew up another essay, entitled "De Distributione Geographica Plantarum secundum cœli temperiem et altitudinem montium." In the mean time, in proportion as the world became convinced of the importance of such researches, numerous philosophers occupied themselves in their prosecution. Among these the principal are Robert Brown, Leopold de Buch, De Candolle, Wahlenberg, and Schouw. The latter has given us the largest work extant on the subject, in his "Elemens d'une Géographie Universelle des Vegetaux," the result of much learning and personal observation.

The "Géographie des Plantes" of Messrs Humboldt and Kunth will be published in four parts, and is intended to form a continuation of the *Nova*

Genera et Species Plantarum. The price is also the same as for the parts of that work. We regret that this should be the case, as it will render the work so costly as to exclude it from most libraries.

Publication of a Second Part of the NOVA GENERA PLANTARUM of MICHELI.

M. Octavian Targioni Zozzetti, Professor of Botany at Florence, and possessor of the herbarium and manuscripts of Micheli, is engaged in preparing a certain portion of the latter for publication. The work will form a second volume to that which has been so long in the hands of botanists; and will contain 70 engraved plates, with numerous magnified analytical figures. In the letter-press will be found notes and synonymes selected from modern authors.

The BOTANICAL WORKS of Mr ROBERT BROWN, collected together and translated into German, with Notes, by Dr NEES AB ESENBECK.

The public are greatly indebted to Dr Nees ab Esenbeck for this meritorious undertaking; and our excellent countryman Mr Robert Brown cannot but feel gratified, not only at seeing his valuable essays brought together, and rendered more accessible to the botanical world, but at the task having fallen into the hands of a philosopher equally characterized by liberal feeling and scientific attainments. The notes occasionally added by the learned editor are highly interesting and instructive. Those on the red snow of the Arctic Regions present the most detailed and perfect history hitherto given of that most remarkable *Alga*, and comprehend not only the botanical but the chemical characters. In order to render Mr Brown's account of the plants brought from Baffin's Bay by Captain Ross, and of the Flora of Melville Island, more acceptable to the scientific reader, he has not hesitated to bring forward Dr Richardson's account of the plants collected in his journey with Captain Franklin, and Dr Hooker's report of the plants brought from the polar regions by Captain Scoresby.

The two first volumes of this very interesting publication have reached us. We are informed by Dr Nees ab Esenbeck, that the third will contain the *Prodromus Floræ Novæ Hollandiæ.*

On the Natural Families TROPEOLEÆ, GERANIEÆ, OXALIDEÆ, and LINEÆ; by M. AUGUSTE DE ST HILAIRE.

In a notice contained in the Nouv. Bull. des Sciences par la Soc. Philomatique, M. A. de St Hilaire demonstrates the necessity of uniting the above mentioned families into one group—GERANIEÆ. We have not space to follow him through all his observations, and they will not admit of abridgment. He has, however, shewn, that the characters of these several families cannot be accurately defined, as they pass insensibly into each other; discrepancies, moreover, existing sometimes even in the same genus. De Candolle himself doubts the validity of *Tropeoleæ* as a distinct family.—*Nouv. Bull. Soc. Philom.*

SYSTEMA ORBIS VEGETABILIS. Primas Lineas Novæ Constructionis, periclitatur ELIAS FRIES. Pars I. Plantæ Homonemeæ. 8vo. Lund. 1825.

Under this title, M. Fries has published a book full of learned critical research and laborious practical investigation. His views, however, in some respects are, we fear, somewhat too abstruse for extensive application; but, though many may differ from M. Fries in his theoretical speculations, they cannot fail to bestow very high commendation on the extensive knowledge he has evinced in regard to the ordinal and generic relations of the obscure plants he has so well described. In the present volume he has given an arrangement of about 450 genera, commencing with the Fungi and ending with the Algæ. To give any idea of the manner in which this important work is executed, would require too long and laborious an analysis for this place. We shall therefore content ourselves with giving a table of his views generally and particularly as far as this volume is concerned. In his introduction we have the following:

"Primariæ naturæ vires ex his legibus dispositæ sunt:

A. Tellustres, intersecus vel in contactu agentes.

* Intersecus agentes et in producto continuæ.

1. *Sensibilitas,* facultas sentiendi, movendi (se et alia), et sui conscium esse. Objectum *Psychologiæ.*
2. *Vitalis vis,* facultas partes heterogeneas absorbendi, interna circulatione assimilandi, et prolem similarem proferendi. Objectum *Physiologiæ.*

** In contactu agentes et in producto suo absolutæ:

3. *Affinitas.* Objectum *Chemiæ.*
4. *Electricitas.* Objectum *Physicæ.*

B. Siderales, e longissima distantia agentes;

* *Reproductivæ.*

1. *Lux.*

** *Productivæ.*

2. *Attractio* (Gravitatio).

Naturæ fetus, qui cum his coexistunt, considerantur quoque ut

A. Tellustres, forma varii, se invicem justa positi, vel componentes, a viribus tam tellus tribus quam sideralibus determinati, e partibus simul sumptis integrum efficientibus compositi. *Naturalia* proprie dicta, objecta *Historiæ Naturalis.*

* *Organici,* Reproductivi, ex organis variis definitis compositi, evolutione interna exorti.

1. *Animalia,* sensibilitate gaudentia. Objecta *Zoologiæ.*
2. *Vegetabilia,* vita (nec sensibilitate) gaudentia. Objecta *Botanices.*

** *Inorganici,* producti, homogenei, particulis juxtapositis (nec priorum notæ):

3. *Mineralia,* ponderabilia. Objecta *Mineralogiæ.*
4. *Elementa,* imponderabilia. Objecta *Physicæ.*

B. Siderales, qui sunt complexus tellustrium, spæroidei, a se invicem remotissimi, viribus sideralibus tantum reagentes et e naturæ productis heterogeneis et per se integris compositi. *Astra,* et Objecta *Astronomiæ.*

* Luce et attractione prædit, reproductivi, centrales.

1. *Soles.*

** Attractione, nec luce propria, præditi, productivi, peripherici.

2. *Planetæ.*

All the genera in this volume are referred by M. Fries to two great classes—*Fungi* and *Algæ.*

Fungi sunt vegetabilia homonemea, in prima infantia velata, extremitatibus determinatis, a matrice intus susceptione sese nutrientia, omnibus organis simul explicatis definite pereunt.

This class is divided as follows:

A. *Sporidia contained in thecæ or tubular cells* (Asci).

* Cohors I. *Hymenomycetes.* Thecæ in an open receptacle.
** Cohors II. *Pyrenomycetes.* Thecæ within a perithecium.

B. *Sporidia free.*

* Cohors III. *Gasteromycetes.* Sporidia within a peridium.
** Cohors IV. *Coniomycetes.* Sporidia destitute of a true peridium.

ALGÆ.—Vegetabilia homonemea, denudata, extremitatibus junioribus, a cingente medio nutritionem undique absorbentia, nova organa successive et indeterminate explicantia.

This class is subdivided according to the nature of the *thallus*, an organ which, according to M. Fries, is common to all the *Algæ*.

A. *Thallus emerged.* (Aërial Algæ.)

* Cohors I. *Lichenes.* Thallus anomalous, of a cellulose, rarely filamentous structure, springing from a heterogeneous fructifying nucleus.
** Cohors II. *Byssaceæ.* Thallus filamentous; filaments either solitary, with internal sporæ, or conglutinate, with homogeneous fruit.

B. *Thallus submerged.* (Aquatic Algæ.)

* Cohors III. *Hydrophyceæ.* Thallus of a filamentous structure: filaments solitary or many conglutinate, viviparous, and sporidiferous.
** Cohors IV. *Diatomeæ.* Thallus subinorganic, containing various corpuscules, which multiply by self-division. Fruit none.

Numerous observations of great value are dispersed through every part of the work, and so many new genera established, that it ought to be in the hands of every one to whom the study of these plants possesses interest.

MEDICAL JURISPRUDENCE.

Medical Provident Institution of Scotland.

THE following notice will shew that the scheme for instituting a provisionary fund, accessible only to the medical profession, of which we had occasion to deliver a favourable opinion in our last Number, is now to be carried into execution without further delay. We wish it every success, and have no doubt, that, in the able and scientific hands in which it has commenced, it will be founded on secure and permanent principles.

"The committee * appointed by the meeting of 23d August having met, and deliberated upon the description of benefits to be granted by this institution, were of opinion, that it should embrace all those specified in a paper formerly printed and circulated among the members of the profession, under the title of *Hints with a view to the formation of a Society among the Medical Profession of Scotland;* but that it shall be optional to take any one or more of them. These benefits are as follows:

"1. Assurance on health, or sums payable during professional incapacity, succeeded by annuities certain in old age. 2. Annuities in old age, unconnected with any benefit during professional incapacity. 3. The assurance of sums payable at death, but convertible at the option of the assured into annuities payable during their own lives, or the lives of their widows or nominees. 4. Annuities to widows or nominees, unconnected with life assurance. 5. Endowments for children in the form of a tontine;—the accumulated fund of each class to be divided among the survivors at different ages not exceeding that of 21, so as to provide for their education, and setting out in the world.

---

* The committee consists of the following gentlemen:—Professor Jameson, Dr Morison, Dr Bellby, Dr Gairdner, Dr Milligan, Dr Wood, Dr Poole, Dr Greville, Mr Lizars, Dr Campbell, Mr George White, Dr Spens, Dr Borthwick, and Dr Miller, of Edinburgh; Dr Mudie of St Andrew's; Dr Grace, and Dr Spence, of Cupar; Dr Walter Graham of Dalkeith; and Mr Allison of Leith.

" The committee have under their consideration the expediency of receiving small sums from members, to be accumulated at compound interest, and the whole proceeds returned to them after a certain period.

" The institution would thus unite in their scheme all the benefits now obtainable, from, 1*st*, Friendly Societies; 2*d*, Life Assurance Companies; and, 3*d*, Savings Banks. It has also been suggested, that members might be accommodated with certain sums on loan, on security of their previous payments to the funds of the institution.

" These several departments of business will be kept entirely distinct, and any surplus that may accrue on any one of the funds, will be exclusively appropriated to the benefit of those who have contributed to such fund; while there will be a great comparative saving in the expence of management, by combining all these branches in one scheme.

" Some of these benefits, it is well known, are not attainable at present from any existing institution; and others, such as life assurance and widows' annuities, have not hitherto been presented to the public in so beneficial a form. A person who makes an assurance on his own life, for instance, with the present companies, has no other choice than to continue his annual payments till death, or lose entirely or in a great measure all that he has already paid: he must either forfeit his policy, or dispose of it at a great disadvantage. In this institution, on the other hand, he will have the option, after attaining a certain age, of converting the full value of his policy into one or other of the following annuities:—1. An annuity for the rest of his own life; or, 2. An annuity for the joint lives of himself and wife, or other nominee, and for the life of the survivor; or, 3. An annuity for his widow or nominee.

" As there will be no body of proprietors distinct from the members, the whole funds will be shared among the latter, according to their respective rights and interests; while they will incur no responsibility beyond the sums they have agreed to contribute.

" As a few weeks must elapse before the necessary tables of payments and benefits can be prepared, the following approximations, and which are to be considered merely as such, are submitted in the mean time.

" An yearly payment of *Two Pounds Twelve Shillings*, commencing at the age of *twenty-one*, and continued till 60, will entitle to a benefit during professional incapacity, at the rate of ONE POUND *per* week, succeeded by an annuity certain of TWENTY-SIX POUNDS for the remainder of life; and an annual payment of *Five Guineas* will purchase the right to double these sums, or TWO POUNDS *per* week during professional incapacity, and an annuity of FIFTY-TWO POUNDS for life after 60. Thus, for a very moderate periodical payment till the age of 60 only, not exceeding *One Shilling* per week in the one case, and about *Two Shillings* in the other, a member entering at the age of 21 will be assured against the privations of sickness, infirmity, and old age, through the remainder of life. Those who enter at a higher age than *twenty-one*, will of course be required to make a corresponding increase in the annual payment.

" Again, a member assuring £1000 upon his life at the age of *twenty-five*, at an annual premium of about *Two Guineas per cent.* will have the option either to continue his payments till death, and leave this sum to be paid then, in any way he may think proper,—or, at the age of 60, he may discontinue his payments, and convert his policy into one or other of the following annuities:—1. An annuity of THIRTY-FIVE POUNDS for the remainder of his own life, payable half-yearly, and down to the moment of death; or, 2. An annuity of TWENTY-SIX POUNDS during the joint lives of himself and his wife, or other nominee, five years younger than himself, and for the life of the survivor, and payable as above; or, 3. An annuity of SEVENTY-FIVE POUNDS for the life of his widow, or nominee; the difference of age, and the payment of the annuity being as before.

"But with a view to the expence necessarily incurred at death, a full year's annuity will be paid to the representatives of the deceased, over and above what may be due at the termination of the life, whenever that may happen.

"All the benefits dependent upon life or health may be purchased either by one single payment, or by an annual payment continued for 7, 14, or 21 years only.

"The committee, in submitting this statement to the members of the profession, do not feel it necessary at present to enter into further details. The scheme in all its parts requires only to be understood to recommend itself to their support and encouragement, whatever may be the rank they hold, and whether they do or do not mean themselves to participate in its peculiar advantages.

"Agents will be appointed throughout the country, from whom, in a short time, information regarding the necessary tables and arrangements may be received, and to whom communications and proposals may be addressed.

"*Edinburgh*, 23*d August* 1826. JAS. CLEGHORN, *Secretary*."

Anatomical and Physiological Society of London.

A society is about to commence in London, for the purpose of promoting physiological pursuits, and affording facilities for the institution of experimental researches, and a more ready intercourse among the individual cultivators of these fundamental sciences. We subjoin the proposed conditions of entry: The admission fee for the Resident Ordinary Members is fixed at Five Guineas; and for the Non-resident Members, at Six Guineas; the latter paying no annual contribution.—Non-resident Members will be admitted, with the same facilities, until the 1st June 1827, on their authorizing some friend in London to enrol their names, and pay the admission fee before that time.—The annual contribution of the Resident Ordinary Members is fixed at Three Pounds, which shall entitle them to the use of the Library and the Museum, and to the gratuitous distribution of the Transactions of the Society, so long as they continue members thereof.—These privileges may be secured at once by a Resident Ordinary Member on paying the sum of Twenty-five guineas, including his admission fee, at one payment, in lieu of annual contribution.—Non-resident Members, on paying the sum of Ten Guineas, instead of Six, as an admission fee, become entitled to the gratuitous distribution of the Transactions.—All payments to be made into the hands of the Treasurer, or of the Banker of the society.

OBITUARY.

DIED, at his house, in Argyle Square, August 21. 1826, Dr JOHN BARCLAY, F.R.S.E., Fellow of the Royal College of Physicians, an eminent teacher of Anatomy in this place. Originally destined for the Church, Dr Barclay turned his attention to Physick about the year 1799, though almost to the last he continued an Elder, and repeatedly sat in the General Assembly. In 1796 he took his degree of M.D.; and soon after commenced teacher. Besides his success and usefulness in this capacity, his writings on *Medical Nomenclature*, on *Muscular Motion*, on *the Arteries*, and on *Life and Organisation*, bear ample testimony to his learning and industry; and the Museum which he has bequeathed, with a reservation in favour of his successor Dr Knox, to the Royal College of Surgeons, is a noble monument of that zeal for the science he taught, with which he was not only animated himself, but inspired his auditors. About the beginning of 1825, Dr Barclay, finding his health rapidly declining, entered into copartnership with Dr Knox, by which he was relieved to a great degree from the duties of teaching his numerous classes; but he never entirely resigned his lectureship, or retired from business. Dr Knox, his partner and successor, thus became bound to fulfil Dr Barclay's engagements to his perpetual pupils. A habitual good humour endeared Dr Barclay to a very extensive circle of acquaintance. His age was sixty-six: he has left no family.

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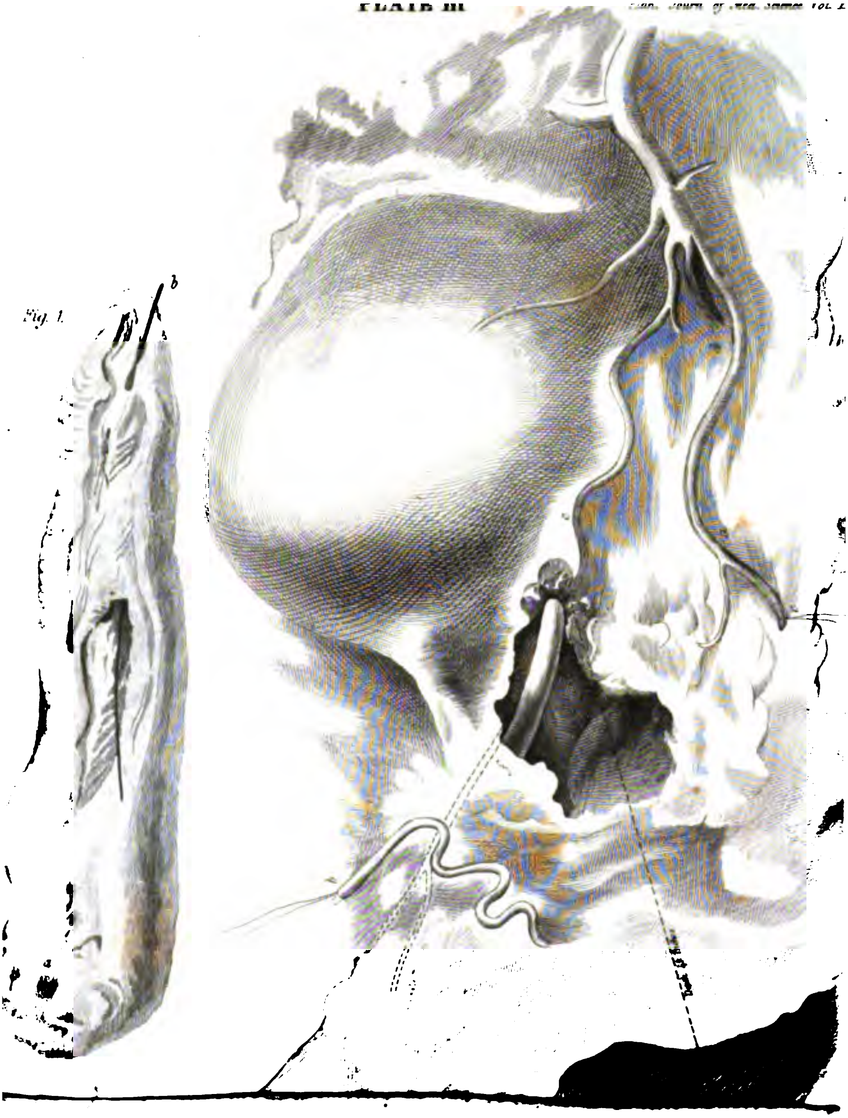
P. Neill, *Printer*.

PLATE III

Fig. 1.



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